565 includes hereditary specialization, hierarchy, repulsion between the
564 different groups, and refusal to associate with people of a different caste. These principles are partly in force among the Tuareg, whose type of social organization borrows from the two systems.

/150/ Furthermore, there are great analogies between the two systems. This sort of aristocratic organization is well suited to nomadic life, in opposition to democratic organization which is more commonly found among sedentary groups.

171 According to some authors, the caste system is specifically Hindu; it only existed in its pure state in India and to a lesser de-
564 gree in ancient Egypt. (1) Thus we are hardly surprised to find this organization among the Tuareg who, culturally, belong to the same cycle of civilization.

182 The crystallization of that organization among this people,
564 who on the whole possess quite high intellectual qualities, as well as the material crystallization, can only be explained by the isolation in which it was confined as a result of circumstances where climate has certainly played a large role.

565 The Tuareg are divided into suzerains (Imochar) of a specifically warlike nature, vassals (Imrad) most commonly shepherds, religious men (Inislimen), and serfs (Iklân). Other elements from different origins are enfeoffed to them, such as the Issekkemâren, the Iboroliten, and the Enaden.

174 The present hierarchy obviously results from a series of wars
182 and civil conflicts. In the fight for life each person endeavored to get his share, and as always this was at the expense of the weaker.
565 Tribes achieved a predominance which they were not always able

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1. Deniker, Les races et les peuples de la terre /The Races and Peoples of the World/, p. 489.

174 Matriarchy, in fact, goes back to the times when primitive man had no exact notions on the causes of childbirth.

For, "it seems," Gautier continues, "that primitive man attributed all birth to parthenogenesis and could only imagine a conception which was immaculate. He saw no ineluctable connection between caressing and gestation. Although he practiced fertilization by instinct, he had no clear idea of this. The word 'father' had no sense for him, and consequently the children could only group themselves around the mother." (2)

2. La conquête du Sahara, p. 190.

On the other hand, since rules of marriage had not yet been established in that period, it was impossible to seek out paternity. It is from this state of things that filiation by the uterine branch is derived. With the totemic beliefs to be found in lower civilizations, the matrilocal system found still another reason for existence. It was linked with exogamy, preventing unions between the closest relatives and between people of different castes, and making incest impossible.

•171 601 In certain primitive Australian groups, /152/ the study of which helps us understand the evolution of societies, there is a system of kinship by classes of kin that is found among the Tuareg and the peoples of the Sudan. It was defined by Morgan, and groups in the first degree brothers, sisters, and cousins; in the second degree the father, mother, and their siblings; in the third degree the grandparents with their siblings, etc.

174 In matriarchy, the natural protector of the child is the brother of his mother. In the same way the obligation for the husband to live with his wife's family is connected with matriarchy. This
591 custom is practiced in the Ahaggar, where the husband must live
[851] one year in the camp of his parents-in-law, this time being shortened when the young wife has borne a child. When a woman becomes
768 the widow of a man who does not belong to her tribe, she rejoins her tribe and takes her children with her,

184 from uncle to nephew, and two from second cousin to second cousin.
643 The matriarchal custom was not followed, but we know from traditions
[173] gathered among the Ioullimmiden that at the election of Our Ilmet, the eponymous ancestor of the tribe, the Tuareg fought among themselves about the custom of succession, and the party which backed Our Ilmet, the patriarchal candidate, finally won out. (1)

1. Dr. Richer, Les Oulliminden.

171 As we have already remarked and as Seligman has pointed out,
611 it is seen that in spite of the fact that descent is matrilinear (except
631 among the Ioullimmiden), the government of each unit is patriarchal and similar in principal to that in a nomadic Arab tribe. (2)

2. Les races de l'Afrique /The Races of Africa/, p. 128.

643 The aménokal does not hold his appointment for life, and the titleholder may be dispossessed by a more popular chief for one
651 reason or another. Each year he levies a tribute on each fraction, either in the form of foods, grains, butter, animals, servants, or in skins and worked objects. The caravans pay him a tithe as a toll. He receives the products of certain lands and herds which are his
[644] appanage. In exchange, he must maintain the members of his entourage and the relatives of his predecessor.

There was formerly a custom among the northern Tuareg, /156/
[178] today fallen into disuse, which was called the right of tamaa. It
[644] benefited the eventual heir to the command and consisted of a due from the tributes payed by the vassals. This custom was still in use a little less than a century ago.

643 The aménokal's symbol of leadership is an enormous war drum
[534] called tobol; this word is of Arabic origin and means "drum,"
177 "cylinder of a drum."
192]

643 The aménokal generally has one or two caliphs charged with taking
644 his place or representing him with the fractions.

The amrar. -- Each tribe, called taousit, has its amrar, who,
631 like the aménokal, is chosen according to matriarchal rules.

Amrar, in Tamashek,
[192] means "the old," "the respectable," "the ancient," /158/ and by extension,
[643 "possessor of wisdom." It is
534] the equivalent of the Arab word "sheik."

The amrar is the intermediary between the people of his tribe and the aménokal. He transmits orders from the latter and sees that they are carried out. He collects the tioussé intended for the aménokal from the Imrad and sets the share that each is to pay. He settles minor disputes between the people of his tribe and fixes the pasturing zone to be used by each camp.

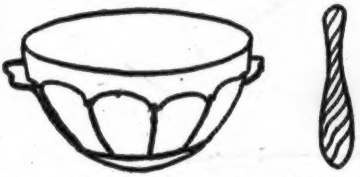

Fig. 16. The tobol, symbol of the aménokal's command, with its "imîtkar."

He takes part in the vote which sanctions the election of the aménokal and at the arollan, which discusses major decisions concerning the life of the confederation.

In a confederation subject to an aménokal, a grouping which the Ahaggar Tuareg also call tégéhé, there may be several tobol, that is, several suzerain tribes, each with its vassals. The name taousit, making double use of the word for tribe, is sometimes used to designate the whole whose chief also bears the name of amrar among the Ihǎggaren and agoalla among the Kel Aïr /Asben/.

The amrar has no characteristic symbol of command, at least
[171] among the Ihǎggaren. In certain Sudanese tribes, many formerly had a drum analogous to that of the aménokal.

565 The Imochar. -- The Imochar (singular, Amacher) form the
192 aristocratic class. This word means "man of dominant stock

174 were chased by Arab marabouts at the end of the fifteenth century. 564 It is plausible that a number of Jews from Tamentit, particularly those practicing the crafts of jeweler or blacksmith, very respected professions among the Tuareg, found refuge with them. Perhaps the Tuareg received a new artistic influence through them. Their knowledge /177/ of fire [301] [531] and treatment of ores must have permitted the introduction of a larger scale of iron industry among the Tuareg, as well as the use of metal instruments which certainly could not have been very developed before that time; in general, the techniques of the nomadic shepherds was limited to leather and wood. There is no doubt of the artistic relationship between Tamentit jewelry and the Jewish goldsmith's work from North [171] Africa, on the one hand, and the goldsmith's craft now in vogue among the Tuareg, on the other; this can justify the opinion that part of the Enaden are of Israelite origin. But Sudanese elements have also contributed to the physical formation of the group. We must see the peculiar Tuareg art, at the same time heavy in its forms and delicate in detail, through this heteroclite mixture.

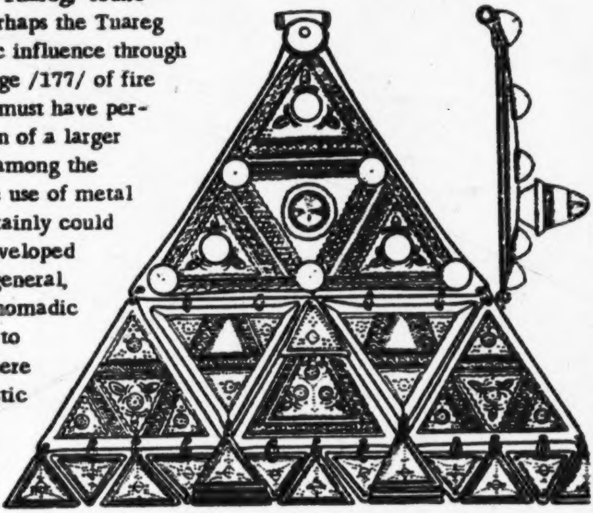

Fig. 18. Silver pendant worn around the neck by Ahaggar women. In the composition are found the triangular motifs common to Kabyle art and to some Berber tribes from Atlas.

564 [727] The Enaden of the Ahaggar are few in number. They include five or six families who recently settled in the country following raids on them by the Ihăggaren. /178/ Most of them are natives of Ădrar des Ifôras

342 crosspiece forming the central frame; four vertical stakes are placed two by two on each side of the tent.

● [171] This model used to be much more widespread in the Ahaggar, and it seems to be an older form, for the model presently used must have been taken from the Ioullimmiden. All the old people recall having seen it used in their youth in all camps on an equal basis with the vertical stake form.

[182 132] The tent with arches, the upper part of which forms a kind of dome, is better able to withstand the rains than the other. If that was its raison d'être, we may understand why it disappeared with the gradual drying out of the Sahara. This disappearance may also have been caused by the difficulty of procuring large roots to make the arches.

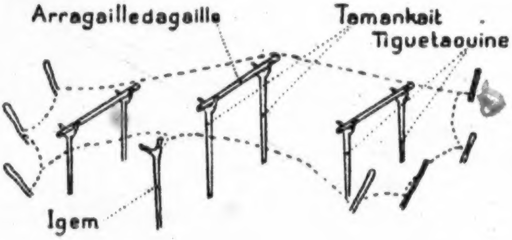

Fig. 25. Tent used by the Kel Rela. During the rainy season, the two central stakes are replaced by a single stake holding up a ridge tile.

[386] The awning is always covered with a coat of red ocher which protects it from the heat of the sun and from the rain.

[285] In both models, the tent always includes a sort of detachable closing made of a long mat (asaber) woven from the stems of graminaceae. It is unrolled inside around the stakes to close the tent completely. High up in the mountains the Tuareg reduce the inside area of the tent in order to keep warmer, and provide the part opposite /225/ the opening with a little stone wall which effectively protects them from the cold. The door is always opened toward the south.

251 Thus, they are forced to keep supplies on hand, /226/ but it is a
343 limited stock, consisting of two or three bags of sorghum or dates
which are transported each time the camp is moved. It is customary,
when supplies are more considerable, to leave them in the rocks of
the mountains in spots known to the people of the tribe. These
granaries (ekaham) allow them to travel lighter and at the same time
put supplies in safe places. In case camps are raided they make a
sufficient food reserve so that the people are not driven to starvation.

Some tribes which have gardens in the centers of cultivation
184 often have food deposits there; they are stored for a whole family
343 group. Thus the Dăg Râli have stores in the Koudia, at Ilâman,
423 Tarahananet, Ăbalessa, etc., where they entrust the care of their
251 goods to their local representatives. These centers have secret
granaries; they are scarcely used these days, but they were used
before the French occupation for reasons of safety in case of raids.
We have seen hiding places of this kind at Tit and at Bloûmet, and
there are probably some at Tazerouk and Ideles. They consist of
cellars dug in the soil at ground level and hidden from the eyes of
passers-by. Merchandise was thus protected from men and rodents.

●171 While we are on the subject, let us add that granaries dug in
rock are common among all Berbers. Today they may still be seen
in Morocco and among the Chaouia /Shawia/ of Aurès. This custom
seems to have been common in Mediterranean countries, in Syria,
and especially in Palestine where it was already reported in Biblical
times.

343 The Akhamouk aménokal was the only person who had real
643 granaries. He had three or four of them constructed of stone bound
251 with clay using the Sudanese technique. They were placed at the
top of a rocky crest on the left bank of the Ăbalessa wadi, near the
place where his camp was most often established.

513 Sleeping arrangements. -- Bedding includes only one or two
562 sheepskins sewn together, or more rarely a rug among the rich people.

224 The radial-point trap is the one described by Montandon (1)

1. Traité d'ethnologie culturelle /A Dissertation on Cultural Ethnology/, p. 222, fig. 8.

[171] and was already known by the Egyptians. It is spread over all of central and intertropical Africa. It is composed of a disk made of vegetable matter to which are attached the stems of rather resistant graminaceae which converge toward the center. The apparatus is placed on a little pit with a diameter a little less than its own, then covered over with straw /242/ and sand. It is arranged under trees whose leaves are still green and which the gazelles come to browse on. While going around the tree, the beasts finally step on it, and the hoof which passes through the stems is caught in the disk. In spite of all efforts and movements, the disk remains attached, thus preventing the animal from getting away. The hunter then steps in. He gets on the animal's trail, follows it, and finally catches up with it. He kills it with a thrust of his lance. Sometimes a lasso is placed on the disk with its end attached to the trunk of the tree or to an old stump.

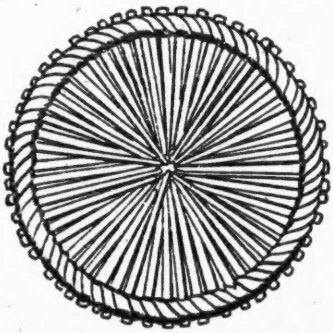

Fig. 33. Trap with radial points used to capture gazelles.

The torsion trap in the shape of an arch is a more complicated
[237] system. It is composed of a fragment of oryx antelope horn on which is set a layer of tendons coming from the same animal and

515 care given to the body, but they find washing completely useless
and even disastrous to health. They even claim that if they washed
[826] every day they would become ill. Their argument is that daily
ablutions of the limbs make the skin scale off.

751 For them the main question is protecting the different parts of the body from the rigors of the sun. All the care that they give the body is to that end.

291 They are in the habit of wearing clothing of material heavily
dyed with indigo which comes off on the skin, giving it a dark-blue
302 color. Far from trying to remove this dye by washing, they become prouder of themselves as the layer of blue becomes thicker. They rub their limbs and faces with new materials to obtain the desired color.

302 To make their skin softer and more brilliant they smear their
[171] limbs with a fatty substance, butter or animal fat. This custom is also adopted by Sudanese Negroes and the desert Arabs.

515 The Tuareg pay the most attention to the mouth and teeth.
[413] They rinse out their mouths with a lot of water after each meal and brush their teeth with little branches which have one end chewed
[824] to form a brush. For this purpose they use *irak* branches (*Salvadora persica*) or palm jereed.

302 /258/ The men and women are very fastidious about caring for the hair.

Young boys have their heads shaved except for a crest or tuft of hair left on the top. Men wear long braided hair, with a little halo shaved on the front of the head. They have their hair dressed
[593] by their sisters or their female friends, in return for which they offer
279 them a bit of tobacco. The hair styles vary from region to region.
[184] They may include a greater or lesser number of braids; the braids may hang down in back or be lifted to the top of the head. At a
[illegible] certain age, when the hair begins to get grey, the men have themselves shaved completely.

302 Men and women make rings around their eyes with kohl; they
751 put it not only on the eyebrows, but especially at the roots of the
eyelashes. They do this for medical purposes, for they attribute
[164] to kohl the ability to protect them against eye maladies, in particular against ophthalmia which strikes many of them.

The Tuareg appre-
[326] ciate the long, narrow hands of people who do no manual labor. They do not take any particular
412 care of them and are
531 satisfied merely to cut
212 their nails rather short. As they do for hair, they bury the scraps so that no one can take them.

304 Tattooing. -- Make-
● [171] up. -- Unlike the Kabyle and the Berbers, the Tuareg are not tattooed. This detail, which may seem insignificant, nevertheless indicates that the relationship of these different human groups is not nearly as close as one might believe, since there are such appreciable differences in mores.

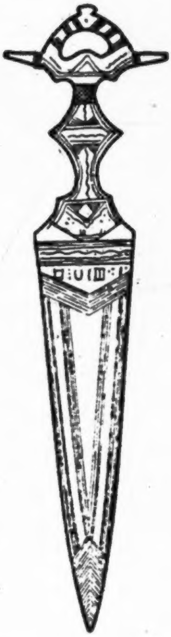

Fig. 36. Hairdressing knife, bearing the name of the artisan who made it in tifinagh characters.

184 Some women blue their gums and sometimes their lips by
304 tattooing them, but this custom is particularly prevalent in the Sudanese tribes of the Timbuktu region.

302 On the other hand, make-up is used on a large scale among Tuareg women. They put red ocher on their faces to protect the
[751] skin from the /260/ sun. For aesthetic reasons they also blue their
[517] lips and around their mouths with indigo.

301 This stone ring (ahbeg) has been described by the explorer
[114] Duveyrier as a weapon. Actually it is only ornamental in nature,
for it is so fragile that it could not withstand strong pressure without shattering, which might seriously wound the man wearing it.

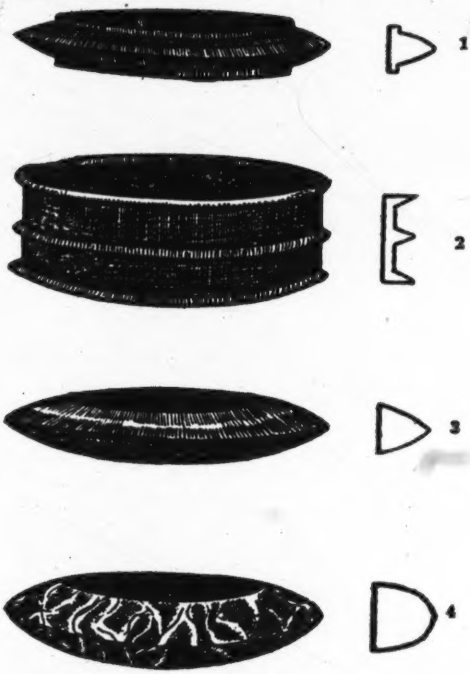

Fig. 41. Types of bracelets worn above the elbow by the Tuareg. 1, 2, and 3 are in soft schist from Aïr, and 4 is made of marble from the Hombori region.

[171] At the present time the Tuareg are the only African people
who wear this stone ring, except for some groups of people who live
in contact with them and have adopted it in a spirit of imitation.
172 It was, however, in very common use among Neolithic peoples,
301 and it is not rare to find fragments of them in the middle of ancient

841 The cessation of the menses during pregnancy is interpreted
843 discerningly, that is, that the baby is fed by the discharge and
rejects the waste products from it at birth (placenta).

When a woman cannot have a child, her husband goes to find
842 a marabout who sells him an amulet which the woman must wear
[789] next to her skin. The wife, for her part, goes to pray near old
[782 tombs known to be those of venerated people. She asks God's
769] pardon for her faults and asks death to intercede for her with the
creator. If the woman conceives, the husband takes the marabout
[431] an offering which sometimes consists of as much as several head of
livestock.

846 After confinement the wife has no sexual relations with her
husband for a month and ten days. On the fortieth day the husband
834 makes his wife a present of sandals and new clothing.

431 Nursing lasts on the average from two to two and one-half
662 years. Boys, however, are weaned six months later than girls,
for they are more fragile, it seems, and need stronger food.

In camp the young child is placed on a cushion, lying on his
854 stomach, and kept in place by a cloth band which passes over his
loins and ties under the cushion. His wrists are also sometimes
attached. Sometimes a wooden frame made of arches is placed
over him; it holds up cloths and protects him from flies, light,
[184] and sandstorms, all at the same time. The Ioullimmiden Tuareg
use little cradles which are hooked to the arches of the tent.

At moving time the mother carries her child on her back or
on her hip, held by a loincloth knotted over the breasts. This
[171] method, also used by the Sudanese, does not seem to disturb the
child, in spite of the /286/ mother's movements, which are some-
[853] times quite sudden. If he cries, she nurses him until all the milk
is gone; there is no question of hours or measure for feedings.

The long nursing period as well as the carrying system causes
[826 the woman's breasts to sag rapidly after the first child. For the
851] Tuareg, however, aesthetics count less than motherhood, which
517] ennobles the woman.

304 Circumcision. -- Boys are circumcised at the age of three or
four, usually by a marabout. Circumcision (amoud, amilli, or
852 azemmoued) is not the occasion for any festivity and is practiced
collectively. The contusing instrument used is a little knife with
[412 302] an iron blade, used by the men as a razor. During the healing
period the child rests in his parents' camp and is cared for by them.

● [171] Little girls are not excised as they are among the Moors of
Tagant and Hodh.

Children go around naked until they are five or six years old,
291 depending on the wealth or the foresight of their parents. Little
855 [556] girls wear a loincloth at the age of six or seven, while boys wear
trousers of the same style as the men.

861 Education. -- Children's education begins after weaning. From
that time on the boy passes under the control of his father, while
the girl stays in her mother's hands. This education is hardly complicated for either the boy or girl.

The little boy, from the age of five, takes care of watching
868 the goats and sheep by himself. Later he is entrusted with the camels,
857 which he leads to pasture and to drink. He is also taught how to
[162] milk goats, for among the Tuareg, men, as a rule, take charge of
this job. Toward the age of seven he begins to ride camels. Then
fights with sabers or lances are organized in the form of games
between children of the same age, arms being replaced by millet
stems or tree branches. This is not a part of education properly
speaking, since it is done by the children themselves.

868 Religious education is rather neglected among the Ahaggar
869 Tuareg where marabouts are scarce. When there is a marabout in a
camp, he teaches children and young people the rudiments of the
[212] Koran, which they learn by heart by singing it all day long, for they
are ignorant of Arabic writing.

881 /287/ The litham /veil/ is put on the boy at fifteen or sixteen
when the hair begins to appear in his armpits. It is put on by the
[145] father, most often at the time of Ramadan. There is no additional
291 ceremony for the occasion. The father gives his son some good ad-
[131] vice, and young women and girls give him tobacco as a gift.

534 horsehair attached to the ends. During the music the player from
[237] time to time rubs the horsehair with a piece of resin from the gum
[314] tree; this serves as rosin. /288/ The amzad skins are often
decorated with painted motifs in very vivid colors, or else they
[532] are covered with tifinagh inscriptions indicating the name of the
owner and bearing love verses for the use of admirers.

Among the Ihǎggaren violins are usually large, reaching as
much as 40 centimeters in diameter. In Sudanese tribes, on the
● [171] other hand, they are much smaller, rarely exceeding 25 to 30
centimeters.

533 The amzad plays an important role among the Tuareg, who
really make a true cult of it. Young men go to listen to the girls
play it. After they are married, they love to hear their wives, who
charm in this way the empty hours of summer evenings. Not play-
533 ing the amzad is a punishment that the women inflict on the men,
626 and during battles warriors always try to be brave lest their wives
593 or their fiancées deprive them of music. "There will be no amzad,"
they used to say upon returning from an unsuccessful raid. This
prospect was often sufficient to restore their courage and incite
them to go efface their defeat.

882 The ahal. -- At about the age of sixteen, boys and girls have
access to adult society and begin to participate in the ahal.

571 The word ahal means "meeting, conversation, interview." A
521 synonym for it is édéouenné. These musical and literary meetings
have a more or less peculiar nature, depending on whether or not
they are mixed with asri.

517 Asri, literally "to run with the bridle loose," means the practice
521 of some very free mores. To live in a state of asri is to exist under
571 conditions which permit one to practice loose mores. Those who
533 can be in a state of asri are pubescent boys and girls, widowers,
and divorced people of either sex.

These meetings take place near the camps in the shelter of a wadi, but always out of the sight of old people and respectable people of the tribe. They usually take place before the evening

585 A new tent is prepared with all the accessories -- mats, cords,
342 tent stakes -- also new. Inside on the left side is built a little sand
mound, oval in shape, on which the consummation is to take place.
Afterward, when the camp is forced to move, this edifice is respected
and stays in place for several months.

585 On the seventh day, the girl's father has the marriage con-
firmed by a marabout. Then, in the evening the fiancée, who
[533] has stayed hidden all day at the home of a relative, is led amidst
a procession of women playing tambourines to the nuptial tent,
where the young man has preceded her.

The next day the young people gather in the tent of the newlyweds, as they do during the days of festivity which follow the marriage. This meeting is called *tigedelsatin*.

591 The newlyweds live in the camp of the girl's parents for a
year. This institution of "service time" /*temps de service*/ is
[171] mentioned on several occasions in the Old Testament and was
practiced by the Hebrews. It means that the fiancé must live with
his future family, or quite near it, for a temporary or permanent
period of time. This custom results in temporarily restricting the
[593] husband's authority and assuring that they become acquainted and
that the young wife is well treated.

587 If the bride has already been married, she leaves for her
591 husband's camp on the seventh day, mounted on a camel and
accompanied by her friends and her servants.

585 In the first case, new festivities are held a year later. The
591 men and women belonging to the husband's camp go one evening
to the bride's camp and simulate an armed abduction. The
meharists who have stealthily approached then rush into the midst
of the tents and utter war cries, answered by the cries of terror of
the camp women. They surround the tent of the young wife and
claim her as belonging henceforth to their family.

[492] /293/ This is the occasion for new gastronomic flights, and
the next evening the young woman, wrapped in a big white shawl,

172 for religious reasons. At any rate it may be stated positively that the fertility cult was in vogue at the same epoch, to judge from the many drawings which are erotic in character. Finally, we may add that magic was practiced with regard to some animals -- antelopes, hippopotamuses. Their reproductions are often connected with cabalistic signs, such as a double spiral or an appendage between the horns resembling the uraeus of the Egyptians. Several stone statuettes, probably from the Neolithic age, have been found at Tit, Tazerouk (Ahaggar), and Tabelbalet (Tassili). They represented animals, rams or bovids and owls, which were surely the object of idolatry.

In the so-called bovid period, identical observations may be made. Several cows wear disks between their horns or else a little ring representing a slip knot. Perhaps these drawings are related to ram worship which was very much in vogue in North Africa and especially in the oasis of Ammon; this cult seems to have been replaced in the Central Sahara by worship of the cow. This animal was still honored as a god by the Berbers, who called it Doul Korneïn. The Sudanese Peul had no mystic life except
[171] their cow worship. We must explain that no similar belief has been discovered among the Tuareg.

The rock paintings, which are on the whole more recent than the oldest drawings, also give us a few indications to be remembered. Near Djanet a large painted panel represents a series of more or less steatopygic women dancing in the middle of a circle of people who are clapping their hands; then on his side, a man enters in turn into the dance, wearing a mask topped with horns (he is a sorceror or wears an ancestors' mask). This is exactly the picture of the magic scenes which we see among the Sudanese, where they periodically organize dances in which the masks of family ancestors
[532
535] participate. Traces of these dances have even been maintained in the Djanet oasis; every year there, on the occasion of the festival of "zébiba," people dress in tawdry finery and masks topped with horns. At Mertoûtek one may also see a large

492 The tarik is the saddle commonly used by the Ahaggar Tuareg,
the one which is peculiar to them and which they must have known
from time immemorial. The tamzak, which is a decorated variant
[177] of the tarik, owes the origin of its decoration to Hausa influence.
In fact, the peculiar technique of applying perforated metal bands
[171] enhanced by colored leather fabrics is found in horses' saddles of the
Hausa from the Damergou, Sokoto, etc., and there is no doubt
that that art, which is unrelated to that of the Tuareg, is much
more developed among those peoples.

[531]

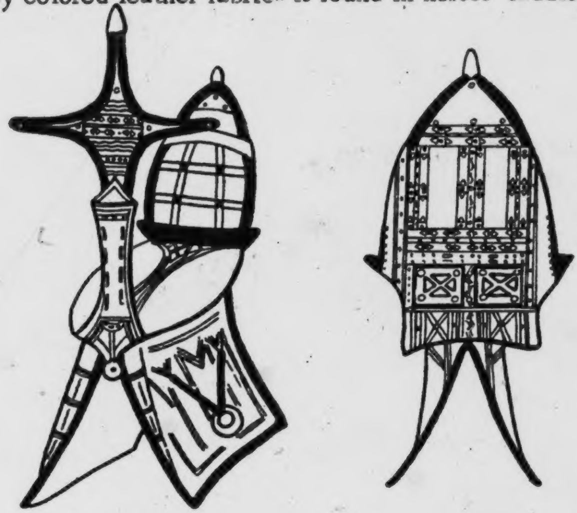

Fig. 54.. 1
The camel saddle called tamzack.

2
Detail of the back of the saddle.

438 The two saddles are usually made in Aïr, indeed even at
Agadez, but the old Tuareg blacksmiths manufacture only the
326 tarik. The tamzak is the work of artisans, who are usually settled
492 at Agadez and more or less crossed with artisans of Hausa origin.
492 Ahaggar blacksmiths make only the tahiast, which is the saddle
171

492 adopted by all the Tuareg of the Ădrar des Ifôras, which the
171 Chaamba Arabs also use, and which is derived from the saddle of
the Moors of the western Sahara.

492 Ahaggar noblewomen, who travel only on meharis, have
[565] special saddles resembling the basour of the Arabs but without the arch covered in cloth. These saddles are called akhaoui; they
[322] are made /319/ of wood and ornamented with large pommels in front and small plaques trimmed with copper nailhe[illegible]s on the side.
[531] For long moves these saddles can be provided with a wicker cage covered with cloth, but this is not a common practice.

[415] Saddles hold leather bags which contain either a change of clothes or food reserves as well as the waterskins constituting the necessary provision for crossing regions without wells.

For transport, camels are provided with a special packsaddle made of palm fibers which literally crowns their backbone. Most of these packsaddles are made in the Tidikelt. For caravans which last a long time the animals are loaded with about 100 kilograms, plus the waterskins that are generally added to the baggage. The servants, who accompany the animals and do not have personal mounts at their disposal, /320/ ride on top as excess weight and make the whole trip under these conditions.

[481] The Tuareg are very poor walkers and cannot conceive of a person's going on foot, even to spare the mount for a few kilometers.

Asses, which as we have said are used for transport within the massif, are provided with a little packsaddle serving as a saddle at the same time. When camp is moved, they are loaded with the
[312] tent, tent stakes, and bags containing food reserves. They also assure the carrying of water from the well to camp.

484 When an Amrid travels alone on a voyage, he takes an ass to
492 carry his water, his small baggage, and his blanket. Pushing the
[481] ass before him, he walks behind carrying his lance over his shoulders. He mounts on it only during the hot hours of the day.

291 tract which otherwise suffer severely in an arid climate, even when the ambiant temperature is only moderately high. Thus it is clear that the teguelmoust does have a very real practical value, regardless of what the Tuareg may say; and it is clear also that the men who wear it need it far more than do their womenfolk who go without.

291 512 462 It is not true that Tuareg women of the Ahaggar (fig. 48) are exposed to the rigors of their environment either as much or in the same way as are their menfolk. The men are out and about a good deal of the time, riding here and there across the countryside on errands of one sort or another or on long journeys far away, while the women sit quietly in the shelter of their tents, gossiping, telling folk tales, doing fancy leatherwork, and teaching tribal lore and sometimes Tifinagh[11] to the children. [567] Every family that is not miserably poor has at least two or three slaves to fetch and carry water, prepare the meals and do the other daily chores, so that the mistress of a normal Tuareg household in the Ahaggar has no need to take a single step outside her tent except when camp is moved, or to visit with her neighbors and to answer calls of nature.

291 171 Although it is true that Tuareg women do not wear veils, it is also true that women of the other Saharan nomad tribes, Arabs included, seldom if ever wear veils either, except on the very rare occasions when they visit a sedentary settlement or town, and even then not always by any means. But Tuareg and other Saharan nomad women alike all draw a corner of the head shawl (or turban cloth) across the nose and mouth occasionally as a simple matter of physical protection, and this has the same practical effect as putting on a veil does.

291 All this data on the wearing of veils and going without them proves nothing, to be sure, but it does go to show that the Tuareg teguelmoust itself can have had a strictly utilitarian origin after all, as Blanguernon (1955, p. 99) implied, quite apart from the origin of the elaborate and rigid ceremonial quality with which its use has become imbued.

291 177 As for the date at which the teguelmoust

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[11] The Tuareg alphabetic script.

567 dowry. But slaves are well fed and cared for as a rule; they get two or three days off each week to look after their own affairs, their children are brought up with the children of their masters, and custom forbids the freeing of a slave who is either too old or too young to fend for himself. A slave may even have a few goats of his own, although when he dies they are not inherited by his family but revert to his master instead. Barth (1857a, vol. 1, p. 387) notes as a striking exception that he saw slaves hitched to a plow and driven with whips in the Auderas Valley, some 60 miles northwest of Agadès.

567 595 [827] Female slaves are often taken as concubines by Tuareg men of the Ahaggar, who prize them because they are less capricious and overbearing than Tuareg women are and "because they have cool skins," a point which would bear further investigation with a skin temperature machine. The children of such unions are often recognized by their fathers but do not inherit from them, and, although free, they have a debased social standing little better than that of their slave forebears. Moussa ag Amastan, who was Amenokal of the Ahaggar from 1905 to 1921,[12] remained unmarried for over 50 years, during most of which time he lived with a bevy of Negro concubines and a young Tuareg girl, named Harendou, whom he had captured on a raid into the Niger Bend country (Benhazera, 1908, p. 142; Lhote, 1955, pp. 221–23). Although this case was exceptional, it was by no means unique.

567 The slaves of the nomadic Tuareg, like those of sedentary communities in the Sahara, seem to have no tribal or clan organizations, but they too have a strong feeling of corporate solidarity that finds expression now and then in nocturnal jamborees which are Sudanese in character.

326 171 The smiths of the Ahaggar present a familiar culture pattern that characterizes groups of smiths and tinkers which, as we have seen, are to be found living among a whole series of nomadic peoples scattered all the way from Baluchistan through Arabia and on, southwest-

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[217] [12] Lhote (1955, p. 220) gives the date of Moussa's death as 1920, the official genealogical table of the Ahaggar nobility, which is kept in the archives of the French Army post at Tamanrasset, gives it as 1921, and Foley (1930, p. 9) gives it as 1922. In 1956

326 [171] ward and then westward, across the North African hinterland to the shores of the Atlantic. The general description of this pattern, given above in chapter V under the sub-heading *Special Classes and Minority Groups* in the section on *Agricultural Centers*, leaves little more to add.

Smiths of the Ahaggar usually live in single 326 463 family units or small groups widely separated from each other (fig. 50). A few families follow Tuareg groups on their seasonal rounds, but the great majority remain sedentary most of the time in one agricultural center or another, and go out only now and then for a few weeks or months, to do a general repair and re-equipment job in the camps of some nomadic tribe or clan. [759] The men work wood and metals and are also barber-surgeons, while the women specialize in fancy leatherwork and embroidery. [584] In addition to these functions and those previously mentioned, both sexes of the smith community act as both go-betweens and spies in clandestine love affairs. They also engage in intertribal secret intelligence work. And a major Tuareg chief may sometimes have a smith as his most trusted counsellor and confidant.

326 The smiths usually dress as do the poorer Tuareg. [291] The men all wear the teguelmoust but in a sloppy fashion, and they seem to have no qualms about exposing their mouths. [582] They are endogamous and monogamous as a general rule, although a few have more than one wife and some of them marry Haratin or occasionally slaves. Ostensibly because of their lowly social status, but probably in fact more because of the fear of sorcery that they inspire, they come and go everywhere as they please, although always with a cringingly ingratiating manner. Even after one has come to know them fairly well they still give an impression of constant watchfulness and profoundly sycophantic tact of the delicately oiled as opposed to the heavily greased variety. The smiths are the most perspicacious and cleverly adaptable of all Saharan peoples, for they have learned to live off and so outlive flamboyant warriors with their retinues and

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[217] the author was so fortunate as to obtain a copy of the genealogical table in question, thanks to the very kind cooperation of Captain Roger Bret, Commandant of the *Annexe du Hoggar*, and Claude Blanguernon, Director of Nomad Schools.

us that they are the descendants of a woman by the name of 173
Tin Hinane. In the war which brought Azdjer and Ahaggar to 562
arms, the tears of the Imanan women were the deciding factor
in the Ahaggar taking up arms.

As to inheritance, it is known that this is handed down 428
through the woman. It is from his mother that the son holds 562
the right to command and to the collection of the "tioussé,"
or tribute from the "imr'ad," or serfs. Not only is the son [611
noble or serf according as his mother is noble or serf regardless 565]
of the father's status, for "it is the womb that holds the child,"
but he also changes his tribe and becomes a member of his
mother's tribe if she does not belong to the same one as her
husband.

In life, the woman enjoys a freedom of conduct which is 562
not customarily allowed in Moslem countries. [171]

She does not veil her face like Moslem women except [576]
as a sign of respect, when she draws her veil, "ikerhi," over
her face.

She goes freely to pay visits to her parents, uncles, aunts, [574
etc., and since she sees them seldom because of the distances 431]
between camps, custom decrees that the relative who receives
her visit should make her a present.

She has succeeded in maintaining monogamy, which is [595]
the rule among the Tuareg even though they are Moslems. /12/

Even though married she may have a man friend, "amidi" 562
• V ⊐ , who sings her praises and makes verses for her, 572
while she gives him something for his personal use. He is,
in a way, her knight. Thus, although married, Dassine
embroidered for her cousin, Moussa ag Amastane, the amenokal
of the Ahaggar, the bridle and breast strap of his horse, while
Moussa, without hesitation, recited before everyone the lines
which he composed in her praise, and often received her visits.

In the absence of her husband she may receive a man [574]
who comes to chat with her and pay her a visit, without the
husband, on his return, dreaming of being annoyed. Only [837
adultery in flagrante delicto can justify the anger of the husband. 593]

this doctrine, the scholar Dozy tells us: "There was no muezzin, 262
or crier, to call to prayer; people were governed by the crow 565
of the rooster; so no one, except in case of dire necessity, 825
might kill roosters or hens or eat eggs" (1). 773

1. *Essai sur l'Histoire de l'Islamisme*, by R. Dozy, pages 348 and 349. Neither mosques nor muezzins are found in Tuareg country. See also *l'Histoire de l'Afrique Septentrionale* /History of North Africa/, by E. Mercier, pages 228 and 255. Volume 1. [171]

Legends and stories are also known on the subject of 773
Ahmamellen and his nephew Elias. Hanoteau told them to us. 823
At Tamanrasset (Ahaggar) the Tuareg showed us a curious breech in a large "gara" that bounds the horizon to the east. They call it "Tiouit-n-Elias" (Elias' cut), and they say that Elias made this breech with one stroke of the "takouba." The piece removed, an enormous rock, lodged in a wadi three kilometers from there, and we were shown it in passing. The breech has also been named "Elias' Breech."

Elias is the Arabic translation of Elijah, and Younes that of [551]
Jonah. These two proper names are still used among the Tuareg. [174]
Might there not be a relationship between this Elias and Elijah, son of Salih?

The Tuareg say that Ahmamellen was a man of extraordinary 174
size and strength, and that he was the equal of an army. Might 773
it have been Salih himself who claimed to be a prophet, then disappeared in the east after having told his followers that he was the Mahdi and that he would come back to fill the world with justice when the seventh king should be mounted on the throne?

5: Nicolaisen E-4, 5 (1951-1955) 1959
MS25 Tuareg MS25
Ahaggar
Air

241 / culture is never practised without irrigation. Rodd thinks that the Air agriculturists [114] gave up shifting cultivation because they are too poor to-day to risk losing their [174] seed in the event of inadequate or irregular rainfall (Rodd 1926a, p. 133). I rather think the reasons are that the agriculturists of the massif nowadays grow very little millet and have a better irrigation system than in the past. In summer maize forms by far the most important crop, and it needs irrigation which is comparatively easy when using zebus for drawing water. However this may be we can assume that a type of agriculture related to Sudanese shifting cultivation was formerly important to the Air agriculturists, and although irrigation is nowadays used everywhere agriculture in certain places of Air is still a kind of shifting cultivation. Many agriculturists do not resort to manuring nor do they carry fresh soil to the gardens as in Ahaggar. With crop rotation they utilize one and the same plot for a few years but then have to cut trees and brush-wood somewhere else to make a new [312] garden. A new well must then also be dug, but as irrigation wells are rather shallow this work is comparatively easy.

171 There are in Air certain agricultural implements related to those of Sudanese 412 farming cultures. We must mention in particular a small hoe hafted by means of a thong *(tagoumit)*. It is unknown both in Ahaggar and Tassili-n-Ajjer as well as further north in the desert while extremely common among Sudanese shifting cultivators. Feilberg has classed it with the so-called Old Sudanese Culture [114] established by Baumann (Feilberg 1934, p. 260ff. – Baumann 1940, p. 50ff.; 1944, p. 213ff.). Baumann claims that this culture did not know the sickle, considered by him an implement of the so-called Young Sudanese Culture (Baumann 1940, p. 56ff.; 1944, p. 283ff.). The sickle (Air: *elegesouar*, Ahaggar: *amreh*) is in fact unknown in many Air villages, and is according to my investigations not generally used for the harvesting of crops but for cutting annual grasses to be stored for 241 fodder. In Air the harvesting methods are as follows:– millet is cut with a knife, 171 maize is cut at the root by means of the above-mentioned hoe, while wheat and barley are pulled up with the hands. Similar harvesting methods seem to be known in the Sudan (Baumann 1944, p. 295ff.). As a Sudanese trait we can [415] perhaps also recognize the large clay amphorae used for the storage of cereals (Rodd 1926, p. 317. – Nicolas 1950a, p. 146).

We can conclude this section as follows:– While the negroes of Ahaggar 174 apparently have arrived in that country later than the fair-skinned Berbers the oldest 144 known population in Air were Hausa-speaking negroes subsisting predominantly 563 as agriculturists. Their original culture apparently was closely related to that of Sudanese shifting cultivators. Contacts with the north and in particular invasions of fair-skinned Tuareg have changed their cultural position. Mixing with the Tuareg they have also changed their physical type, but they are still predominantly negroid. They have adopted a Tuareg dialect but have retained part of their old vocabulary.

Ahaggar
Air

1947, p. 38f., phot. 15, p. 33, p. 117. – Foucauld 1951–52, I, p. 247ff. – Moberg 1927, photographs p. 229 & 257). Among the Southern Tuareg T-shaped posts are used in Air, where, according to my inquiries, they are found notably among the Kel Tedale, the Ikaskazan, and the Kel Fadei – Tuareg who have immigrated fairly recently from the North and are noble or predominantly noble by origin. Air tents with T-shaped posts are published by Lhote and Chudeau (Lhote 1947, fig. 4 p. 39, photo 50 p. 81. – Chudeau 1909, pl. VIII p. 62). T-shaped posts are also said to occur among the Kel Geres, and they are common in skin tents of the Kel Dinnik (Eastern Ioullemmeden) from where detailed descriptions are given by Nicolas (Nicolas 1938, p. 54ff.; 1950a, p. 153ff., p. VIII.). For other Southern Tuareg there seem to be no reliable information on the use of T-shaped posts in skin tents. 342 184

The central T-shaped posts in Tuareg skin tents may probably be considered as related to similar posts in certain black tents (cf. Feilberg 1944, p. 143). This is interesting particularly when viewed in connection with Feilberg's theory that there may perhaps be a certain connection between the black tent and the one-humped camel or dromedary because of approximately similar distributions, and because camels and black tents seem to have arrived in North-Western Africa about the beginning of the Christian era (Feilberg 1944, p. 117, 225ff.) – a view which has also been accepted by Hatt (Hatt 1944–45, p. 260). Obviously a theory connecting camels and black tents in Northern Africa fits very well with our assumption that the camel was introduced to Ahaggar by noble Tuareg among whom we also find the use of central T-shaped posts characteristic of certain black tents. Accordingly we have to test two theories:– 1) The theory that T-shaped posts of Tuareg skin-tents are in fact derived from similar constructions of black tents, and 2) the theory that camels and black tents are historically connected in Northern Africa. 171 342 233 [174]

I think it can be proved that T-shaped posts of Tuareg skin tents are derived from similar elements in black tents, and my arguments are the following:– 171 342

1) The Tuareg live in contact with Arab pastoralists who have black tents. It is stated in literature that black tents are common among the Northern Tuareg (Zeltner 1914, p. 364. – Campbell 1928, p. 247), but this is not correct. It is true, however, as already mentioned by Duveyrier, that black tents are used by some Northern Tuareg (Duveyrier 1864, p. 403f.). But as far as my knowledge goes they occur only among the northernmost Kel Ajjer, the Iforas clans, who belong to the religious Ineslemen class and by some Tuareg are claimed to be noble. Black tents seem to be used occasionally in the south by Tuareg who live in close contact with Arabs. But these Tuareg apparently use black tents only when travelling, and not in ordinary camps (Delafosse 1912, I, p. 334). Black tents are thus adopted by a few Tuareg, and many Tuareg of the north and the south-west have contact with Arab and Moorish black tent dwellers. [648] [114]

2) The Iforas Tuareg just mentioned use T-shaped posts both in black tents

171 342 and in skin tents, and according to my investigations this is, or was, also the case of the Arab pastoral tribe Ouled Ba Hamou in Tidikelt.

3) In Northern Africa T-shaped posts are frequently found in permanent dwellings, but they are then solidly embedded in the ground, whereas in Tuareg skin tents and also in black tents they stand on the surface.

4) The use of skin for tents or other movable dwellings is no doubt of very great age (cf. Feilberg 1944, p. 144), while the T-shaped posts can be considered as belonging to a highly developed tent construction. To my mind there is a certain contrast in this, the more so as the posts or poles of other Tuareg skin tents are fixed in the ground.

5) Arab pastoralists now living in Tuareg countries frequently use Tuareg mat-covered huts and skin tents. Of particular interest is the type of skin tent used by the Deremchaka Arabs living among the Eastern Ioullemmeden (the Kel Dinnik). To support the sheet of skin sewn together these Arabs use a very short crossbar resting on the tops of two oblique poles (Nicolas 1950a, p. 154). A similar or related construction is found in black tents of the Brakna Arabs (Caillié 1830, I, p. 130), and is common in black tents of Algeria including the northern parts of Algerian Sahara (cf. Feilberg 1944, p. 46ff.). And according to tradition the Deremchaka Arabs immigrated from these regions (Nicolas 1950a, p. 67ff.). There seems to be little doubt that the Deremchaka Arabs have adopted a mode of construction typical of certain black tents to the Tuareg skin tent, and there may perhaps be another example of this among the Southern Tuareg: The Tuareg known as Kel Antassar in the region of Timbuktu frequently use a very short crossbar resting on the tops of two central oblique posts to support their skin tents (Lhote 1947, p. 39, 101, 117). The Kel Antassar Tuareg are of religious status; [174] their presumed Arab origin (cf. Delafosse 1912, I, p. 195. – Mohammed Said 1903, p. 210ff. – Richer 1924, p. 14) gives rise to the supposition that they formerly had black tents.

I think these five arguments support the theory that T-shaped posts are foreign to Tuareg skin tents while customary for black tents in use among certain Arabs of Eastern Algeria, Tunis, Tripolitania, and Eastern Libya (cf. Laoust 1930, p. 209ff. – Feilberg 1944, p. 46ff., 146).

I shall now turn to the other theory to be tested, namely that there is a certain 171 233 342 relation between the camel and the black tent. This theory is not easy to prove. The statement that camels and black tents have approximately the same distributions is far from convincing even if we keep to their westernmost areas. In Northern Africa camel-breeders over large areas use other types of dwelling, and black tents are very common among settled and semi-nomadic people of the Atlas, where there are no camels. The distribution of the black tent in Africa (cf. Feilberg 171 342 192 1944, map. II) comes indeed very close to the distribution of Arabic-speaking people, with the main exception that black tents in the Atlas and elsewhere in the north are also used by Berbers. Laoust has proved that some of these northern

Berbers and particularly those of Central Morocco use for their black tents and for 171
important parts of their tents terms derived from Arabic (Laoust 1930, p. 168f., 342
227f.). [192]

We cannot disregard the possibility that black tents were known in Northern Africa before the first Arab invasion. But there can be little doubt that outside of the Atlas black tents are characteristic of Arabic-speaking people, and we seem to be on safe ground if we state that the Arabs are responsible for the present fairly large distribution of black tents in the desert regions between the Red Sea and the Atlantic. And the black tent may have been unknown to the Berbers before the Arab invasion. In connection with this I wish to quote the very eminent [174] scholar Stéphane Gsell who states his opinion on the age of the black tent in Northern Africa as follows:– "Cependant elle s'est répandue tardivement chez les Berbères. Ce fut surtout après la conquête musulmane qu'ils l'adoptèrent, à l'exemple de leurs noveaux maîtres: au VIII^e siècle, un grand nombre d'entre eux avaient des tentes, semblables à celles des Arabes" (Gsell 1920–28, V, p. 216. – cf. El Bekri p. 139).

In discussing the theory of a connection between camels and black tents, our 171
next task is concerned with the history of the camel. For although camels and 233
black tents have different distributions they may nevertheless be historically con- 342
nected and introduced together.

Much has already been written on the history of the camel. René Basset's 114
theory that the camel was introduced by Arabs of the first invasion (Basset 1905) 174
is contrary to all historical information. For we know with certainty that the camel
was known to the Berbers before the Arabs arrived, though it does not seem to be 233
of very great age, contrary to Cauvet's statement (Cauvet 1925–26). Already Barth suggested that the camel came to North-Western Africa about the beginning of the Christian era (Barth 1849, I, p. 3ff.), and this theory seems to be valid (cf. Gautier 1942, p. 190ff. – Walz 1951).

Gautier claims that there is a certain connection between the introduction of the camel and the immigration to North-Western Africa of Berber tribes known as the Zenata, who lived in the northern steppes and desert regions from Tripolitania to Western Algeria. According to Ibn Khaldoun quoted by Gautier the Zenata had many traits in common with the Arabs: they lived in tents, they were camel-breeders, and they rode on horseback (Gautier 1942, p. 217 ff., 227. – cf. Ibn Khaldoun III, p. 179). The theory that the camel was introduced by the Zenata is accepted by Feilberg, who thinks that these people may have introduced the black tent together with the camel (Feilberg 1944, p. 119f., 226).

A connection between the Zenata and the camel is extremely difficult to prove. Gautier's theories on North African history are frequently very hazardous and very contradictory. Thus in his book *Le Passé de l'Afrique du Nord* we find the following statements about the introduction of the camel:– 1) "A tant de bienfaits Rome en a ajouté un dernier: elle a introduit le chameau, permettant ainsi la mise en

114 valeur d'immenses territoires inutilisés" (Gautier 1942, p. 209f.). 2) "Il est donc
174 légitime d'associer le nom des Zenata à la grande révolution politique et sociale
qu'a entraînée au Maghreb l'apparition du chameau. Zénète et chameau ap-
233 paraissent en même temps, et tout se passe comme s'ils apparaissaient l'un portant
l'autre" (Gautier 1942, p. 227). 3) "En effet, quoique Ibn Khaldoun et d'ailleurs tous les historiens arabes nous signalent les Zenata dès le début de la conquête arabe, il semble qu'au VII^e^ siècle les Zenata n'aient pas été encore, aussi exclusivement que plus tard, les représentants du grand nomadisme" (Gautier 1942, p. 227)

Gautier says about the Tuareg: "Ces gens-là sont de grands nomades chameliers; dans nulle autre tribu ce caractère n'est aussi marqué et c'est cela même qui foit leur originalité" (Gautier 1942, p. 240). Most Arab historians confirm that the
175 Tuareg are in particular camel-breeders, and the Tuareg do not belong to the
101 Zenata group. According to Ibn Khaldoun the Berbers fall into two great divisions:
233 1) The *Botr* descending from *Madghis-Ibn-Berr*, and comprising the Zenata group
and several other tribes. 2) The *Beranes* descending from *Bernes-Ibn-Berr*. Several Berber tribes and among them most Tuareg belong to this division (Ibn Khaldoun I, p. 168ff.).

It is interesting that Tuareg camels are frequently referred to in Arab literature
175 as being of a particular light and slender breed extremely well fitted for riding
233 (Ibn Khaldoun II, p. 70, 105. – Edrisi p. 11, 67f., 144f. – Leo Africanus p. 940f.).
To-day there is a marked distinction between the camels of the north found mainly
171 among Arabs, and the camels of the south among the Tuareg. The Arab camel is
233 heavily built and particularly fitted for luggage, and the Tuareg say it is also
superior as a milk-producer. It has a thick covering of wool around the hump and on the forepart of the body. The southern camel as found among the Tuareg is very different. It has a slender built, short hair, and is particularly fitted for riding as mentioned by the ancient Arab authors. These two different camel-breeds apparently exist all over Northern Africa from the Red Sea to the Atlantic, and the heavy and woolly type seems to be characteristic of Arabs (cf. Nachtigal 1879, I, p. 415f. – Murray 1935, p. 92ff. – Cauvet 1925–26, I, p. 79ff.), who are also the
[177] true black-tent dwellers. It is possible that the Arabs have introduced the black
tent into Northern Africa together with a particular breed of camel, while another
[342] breed was introduced before the Arabs.

The cultural position of camel-breeding has never been thoroughly studied. As I have pointed out elsewhere (Nicolaisen 1959a), it is peculiar that so many customs connected with camels are also typical of cow-breeding of the East African cattle complex (cf. Baumann 1940. – Herskovits 1926. – Kroll 1928). The common
[462] traits seem to be the following:– 1) All work connected with camels and oxen is
done by men. 2) Camels and oxen have important social functions and their
[825] breeders take an interest in these animals beyond their practical importance. Both
[538] camels and oxen play an important part in poetry, which is frequently character-
ized by a tendency towards identification between man and beast (cf. Evans
Pritchard 1940. — Foucauld 1925-30, I-II).

Pritchard 1940. – Foucauld 1925–30, I–II). 3) As mentioned (p. 113) camel's milk 171
is not well fitted for churning butter, but it can be used as is the case among certain 234
Arab bedouins of the Northern Sahara and according to my investigations possibly
also among the Kel Ajjer who live close to Arab pastoralists, and among the Moors
(Monteil 1952, p. 73). In most Tuareg groups camel's milk is only occasionally used [302]
for butter which is not eaten but employed as a hair ointment. Among some East [262]
African cattle breeders butter is also churned for this very purpose. 4) All Tuareg
and perhaps all Arab camel-breeders use the stuffed skin of a deceased camel-calf
to deceive the mother animal during milking – for camels like cows will not generally
yield milk unless their calves are present. This custom is widely distributed
among cattle-breeders of the Old World. 5) Camel's urine is considered curative 171
and purifying, although it is not used for cleaning milk bowls or added to milk or butter 237
as among certain East African cattle-breeders. 6) The custom of bleeding living 825
camels to utilize their blood is practised by Tuareg when lost in the desert without [261]
water and food. This very custom is also practised by the Tebu and by Arab
pastoralists of Arabia. Among the latter camel's blood is apparently used frequently
in periods of hunger (Cauvet 1925, I, p. 701. – Finbert 1938, p. 39). This custom
may have been more common among camel-breeders previous to Islam which
forbids the use of blood. 7) Tuareg camel-calves which are very eager for milk and 171
difficult to wean may be cut in two or three places on the bridge of the nose; the 233
wounds will hurt when the calves try to suckle. On adult animals scars from these
wounds will appear as small bumps. They are believed to add to the beauty of riding [825]
camels and are nowadays made predominantly for aesthetic reasons. As a means
to prevent suckling the same method is also applied to oxen by southern Tuareg,
and Mr. Huntingford has informed me that Nilo-Hamites of East Africa have the
same custom. 8) In the south camels are not always branded with a red-hot iron as 171
among the Northern Tuareg and the Arabs. Most Kel Ferouan clans use earmarks 233
cut with a knife, and this is the case of other Air Tuareg, e.g. the Kel Fadei, some 422
of the Ikaskazan, and the Ifadeyen. Earmarks are possibly also used by some of the
Moors of the Western Sahara, who still use certain Berber words in connection
with camel-breeding (Monteil 1952, p. 103).

Tuareg camel-breeding has traits in common with cow-breeding, and they 171
may be due to historical relations between breeding of camels and cows. The 174
domestication of the camel may have taken place in a pastoral culture similar of 233
the East African cattle complex. In that case the type of dwelling characteristic of 342
camel-breeding may have been a barrel-vaulted hut or tent. Pastoral cow-breeders
of Africa and Asia generally use this type of dwelling, and huts or tents of arch
construction are extremely common among the Tuareg. Mat-covered arched huts 184
like those of Air are known also to the Kel Geres, some of the Eastern Ioullemmeden, 342
and to other Tuareg further west in Southern Tuareg country – in particular
those living close to the Niger (Lhote 1947, p. 71, 79. – Nicolas 1938, p. 62; 1950a,
p. 156f. – Barth 1857–58, I, p. 372f., 597f., V, p. 201. – Delafosse 1912, I, p. 334. –

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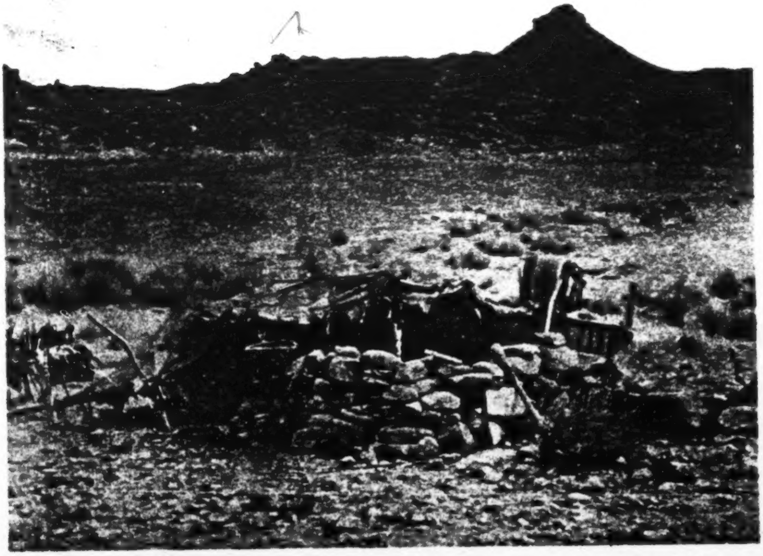

Fig. 12.–Tuareg skin tent in a river valley of the Ahaggar Mountains. The sheet of skin sewn together is placed over three parallel pairs of posts each pair being connected with a horizontal crossbar. The middle pair is higher than the outer pairs. It may be substituted with two equally high pairs of posts with crossbars, or with two arches. Tuareg skin tents have mats to be drawn round the tent under the sheet of skin, and in winter the Ahaggar Tuareg frequently erect stone walls for protection against cold winds, as shown on this photograph.

184 Hourst 1898, p.105ff., 133. – Gabus 1945, p. 361. – Chudeau 1909, pl. XXXII–
342 XXXIII p. 218. – Le Coeur 1937, p. 42f. – Urvoy 1942, p. 33f., pl. I).

Mat-covered arched huts or tents are found only among the Southern Tuareg,
● [171] and as such dwellings are found among many of their Sudanese neighbours it might
342 seem natural to consider them foreign to traditional Tuareg culture. However,
the arched mat-covered tent of the Tuareg seems to be constructionally distinct
from other barrel-vaulted dwellings. It consists of one to three wooden arches
placed parallel to and between a pair of two or three short sticks supporting a
horizontal crossbar. A number of very slender curved sticks cover the upper part
of this construction. They are fastened to the arches and to the horizontal crossbars
(cf. fig. 13). An arched hut of the same type, although more elaborate and solid,
is found in certain Kel Owi villages (fig. 13) as already mentioned p. 77, while the
use of crossbars is apparently unknown to other peoples who have barrel-vaulted
171 huts (*The Sonrai:* – Barth 1857–58, V, p. 160, 163, 165f. – Dubois 1897, p. 232f.;
342 1911, p. 33. – Gabus 1948, p. 10. – Olufsen 1928, p. 137. – Prost 1954, p. 184ff. –
Urvoy 1942, pl. II, 3. – Aymard 1911, p. 144 pl. 25; 1908, p. 183. – *The Fulani and*

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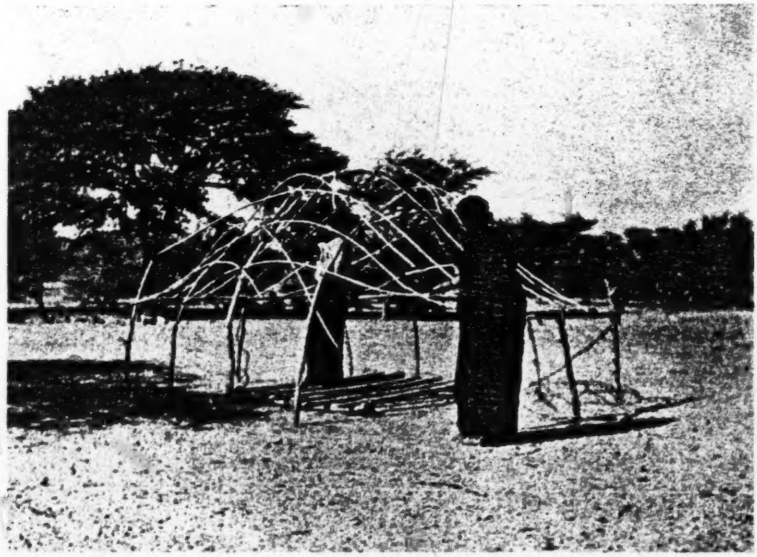

Fig. 13.–Tuareg women of Air erecting the skeleton of a mat-covered arched tent. It consists of three wooden arches placed parallel to and between a pair of three short sticks supporting a horizontal crossbar. Curved sticks cover the upper part of this construction. They are fastened to the arches and at their ends to the horizontal crossbars. Tuareg skin tents with the exception of those provided with T-shaped posts have possibly developed from similar constructions. – The erection of tents among the Tuareg is done by women.

171 *the Toucouleurs:* Urvoy 1952, pl. II, 4. – Desplagnes 1907, pl. CVI p. 396. – *The*
342 *Teda or Tebu:*– Le Coeur 1937, p. 39; 1950, p. 192, pl. XXVI, 99. – Despois 1946,
pl. XXII. – Kronenberg 1959, pl. III).

Tuareg arched tents may also be covered with skin as they are among the
342 Tenguereguif Tuareg around Timbuktu. These Tuareg have a very peculiar arch
construction which also contains crossbars resting on sticks (Lhote 1947, p. 100,
photographs 85–93). In Ahaggar arched tents were formerly extremely common, and
may occasionally be seen even nowadays. Their construction consists of two arches
which may be placed between and parallel to a pair of crossbars each resting on
the tops of two sticks (Foucauld 1951–52, I, p. 247. – Benhazera 1908, p. 26. –
Lhote 1947, p. 42f.; 1955, p. 256. – Nicolaisen 1954, p. 89, 103f.). In Ahaggar I
[565] have been told that arched skin tents were formerly used by all vassals, who did
not have T-shaped posts to support their tents. But arched tents were also used
by some noble Tuareg. The mat-covered arched tents among certain Ioullemmeden
Tuareg are apparently used particularly by vassals (Barth 1857–58, I, p. 372f. –
Gabus 1948, p. 361), but they are also in frequent use among noble Tuareg. In Air
the most common type of dwelling to all Tuareg whatever their social class is the

174 mentioned that the word *Ihaggaren (Ahaggar)* is perhaps derived from *Hoouara*,
[192] which was a common term for certain Berber tribes particularly living in Tripolitania in the Middle Ages. According to Edrisi the Hoouara Berbers were originally Arabs who adopted Berber language (Edrisi p. 66ff.). This is not proved by Ibn
[114] Khaldoun's important work on the history of the Berbers. But Ibn Khaldoun states that the Hoouara came under Arab influence at a very early date, and some of the pastoral Hoouara people apparently migrated southwards to the desert at a later date than the Lemta (Ibn Khaldoun I, p. 275ff.).

I think that the ancestors of the noble Tuareg introduced the camel into the Sahara. I think too that this may have happened before the first Arab invasion of the 7th century. But some of the dominating noble Tuareg have emigrated from Tripolitania after the Arabs have arrived. And it is probable that the political systems of the Tuareg already very early were influenced by the Arabs among whom a class system is found even nowadays as described from Cyrenaica by
171 Evans-Pritchard. In that region there are client tribes known as *Marabtin alsaqan*
565 because they pay *sadaḳa*, a fee, to a free tribe for protection and for the privilege of using the earth and water. Some fragments of client tribes even to-day have a very inferior social position and are forced to make payments to, and to perform services for, the free tribes among whom they live (Evans-Pritchard 1949, p. 53).

The word *sadaqa*, a fee, is known to the Tuareg, and there are other Arabic
171 words connected with their political systems. Here I shall content myself with
192 reference to the word *khalifa* used among the Northern Tuareg for the deputies of a chief, and the very important word *ettebel* meaning "drum", "drum-group", and in Air also "drum-chief". Ultimately the history of Tuareg political systems should
174 probably be viewed in connection with those of Arabs.
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*233 192 The actual number of such terms is not known to me, and the Tuareg say they are almost innumerable. A colour term connected with an age term will, as mentioned above, generally be sufficient to describe the appearance of any animal, but colour terms have practical value also in another sense. They are, as the Tuareg put it, like names of men and dogs, and are used by the women to call individual animals to be milked. The names are then followed by a special sound (cf. p. 39, 135).

It is remarkable how intimately goats are attached to their masters. If the flock, as often happens, is grazing alone at some distance from the camp in the evening after darkness, it will immediately gather round the tents, when a special cry is uttered, or if the dogs bark. On the utterance of another cry by the goatherd the whole flock of goats will follow her quickly. On the whole goat herding is easy, and even very big flocks can be guarded by a single boy, or a girl. Kids still too young to follow the flock during grazing normally browse around the camp all day. In Ahaggar and in Tasilé-n-Ajjer these kids will not, as a rule, be let out of the sight of the camp, but this is not so in Ayr where vegetation is very dense in the river valleys. Kids in the latter area easily get lost and eaten by the numerous jackals. In order to know where the kids are a woman, while occupied with her domestic task in the tent, utters at short intervals a sharp, shrill cry to which the kids respond by bleating loudly.

*233 [237] Goats are chiefly useful for the milk they provide. In general, goat-breeding is organized in such a way that the maximum possible milk is obtained by the nomads, and kids are allowed to suck freely only for a short period after birth. At this period a kid is known as *asarwas*, which term is used for all sucklings without restriction. The duration of the entire period of suckling is dependent on the pasture. If grazing is good, the kids will suck for two to four weeks, while under severe conditions the period of suckling may be up to two months.

To prevent kids from drinking more than their proper share of milk the Tuareg use various devices. *233 417 In Ahaggar and in Tasilé-n-Ajjer small kids are frequently placed in stone enclosures (*afror*). Such enclosures are also used to prevent kids from following the mother animals when the flock leaves the camp for grazing in the morning, and they serve as a protection against beasts of prey during the night. They are about one metre high, and have a diametre of about one metre (cf. Fig. 17). Similar stone enclosures are said to exist among the *Kel Ewey* Tuareg but not elsewhere in Ayr, where the Tuareg generally make larger round enclosures from boughs of thorny acacias, so that one enclosure is big enough for all kids of a household. These enclosures are often known as *zeriba* (Ar.), but the proper Tuareg name is *afarag* (in the north *afarağ*). They are said to be used also by certain Northern *233 Tuareg who camp in the lowland where acacias are common. To prevent small kids from running away, get lost or eaten by jackals, the Tuareg may attach them to a tree or to one of the tent-posts by one of their hind legs, which attachment is known as *témdit* among the Ayr Tuareg. Kids are also sometimes tied with a cord around their necks to prevent suckling when the mother animals are resting in the camp. If there are very few kids they are frequently attached to individual cords (sing. *témetrek*), but several kids are also frequently tied to one and the same cord, which is then known as *éseddi* or *aseddi*. Such a cord has several loops into which the heads of the kids are put, while the other end ● [171] of the cord or rope is fastened to pegs or trees. These methods are not only practised by the Tuareg. I have frequently seen them in use also among pastoral Arabs of the Sahara and of the Algerian High Plateau.

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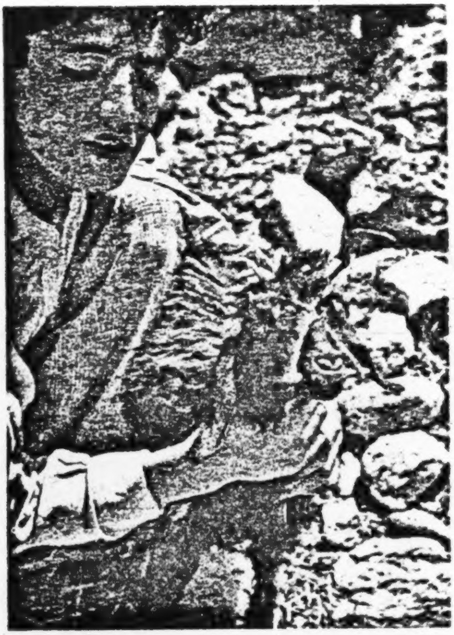

Fig. 19. Photograph illustrating how the stick (*akara, aseḍres*) is attached to the head of a kid. This photograph shows the semi-nomadic Berber-speaking *Chawiya* of Aurès.

234 [262] squatting, she puts the left hind leg of the goat between her right thigh and calf. Goat-milk is drunk, added to food, or made into butter and cheese as described in detail p. 221 ff. Both in Ayr and in Ahaggar it is claimed that goats under favourable conditions yield about two litres of milk a day. But this is to be considered the maximum yield obtained only from goats with young kids when fresh-green annual pasture is available.

233 [262] Meat is not a staple food among the Tuareg. Most of them are reluctant to kill their animals except at certain feasts. But most meat eaten by the Tuareg is goat's meat. In Ayr I was told that some pastoralists keep their goats as well as other domestic animals as long as possible, that is until the animals die a natural death. However, the Tuareg are generally not so irrational. They say that goats may live for about twenty years, and that they are capable of bringing forth kids and yield milk until 15 years old. When goats have reached that age they are sold or killed, but many Tuareg prefer for obvious reasons to keep their milk-goats only to an age of eight or ten years. There is a limit to the number of goats that can be bred by the members of a small camp, because it is not possible to have more than a certain number of goats in one and the same flock, and there will not always be sufficient labour to tend several flocks. Therefore it is evidently preferable to substitute old milk-goats with to be considered rich in goats (and sheep) should own about 300 animals. They also say that in the 233 past the Tuareg of their group owned more goats (and sheep) than nowadays. A household at that time might even possess up to a thousand animals, but it would not have many camels and very few zebus, or none. In Southern Ayr, according to the Tuareg, there has been no severe period of drought 132 within the memory of man, and goat-breeding is consequently a much more stable industry than in the desert proper.

SHEEP

Sheep are very important domestic animals to most North African pastoralists. In the Atlas and on 171 the outskirts of the Northern Sahara sheep belong to various woolly breeds. Woolly sheep are also known in isolated parts of the Western Sudan around Macina south-west of Timbuktu (Doutressoulle 1947, p. 191 ff.). I have myself seen many woolly sheep along the Niger between Niamey and Ayoru – among the Zerma-Sonray and other semi-sedentary peoples – but I have not seen them in the camps of pastoral Tuareg and *Bella*. These sheep belong to the so-called "Goundoum" breed (Zerma) and according to Doutressoulle they constitute a degenerate type of the Macina breed (cf. Doutressoulle 1947, p. 195). It is recorded by Aymard that there are some woolly sheep among the south-western Tuareg (Aymard 1911, p. 118). However, Tuareg sheep in all other groups belong exclusively to the hairy breed which is known as *Ovis longipes*.

It is admitted by zoologists that *Ovis longipes* characterized by a short cover of hair, high stature, and a long thin tail, is the oldest known type of domesticated sheep (cf. Adametz 1920, p. 59 ff.; Antonius 1922, p. 213 ff.; Hilzheimer 1936, p. 199; Doutressoulle 1947, p. 196). In North-western Africa this hairy sheep falls into two types:— (1) The rams have large circular or snailshell-formed horns. This is the breed known to all Northern Tuareg, the Ayr Tuareg, and the *Kel Geres*, and apparently also to other Southern Tuareg. (2) The rams have very long horns of corkscrew form which protrude horizontally. This type is found among some Southern Tuareg, and it is occasionally seen in Tuareg camps immediately south of the Ayr Massif. The Ayr Tuareg say that this breed is typical of the Fulani, and this is in agreement with Doutressoulle's statement (Doutressoulle 1947, p. 200). This latter type of *Ovis longipes* sheep is also known among Nilotic peoples of the Anglo-Egyptian Sudan, and it seems to have been known in Ancient Egypt. It is perhaps the oldest type of *Ovis longipes* sheep (cf. Adametz 1920, p. 59 ff.).

In Ahaggar and Tasilé-n-Ajjer sheep are of relatively little importance to pastoral Tuareg. I believe that very few Tuareg of these regions have more than one sheep to ten goats. The reason for this lies in climatic conditions, for effective sheep-breeding is not possible where pastures do not regenerate regularly, as sheep cannot feed properly on the thorny acacias as can goats. Conditions of sheep-breeding are much more favourable in Ayr than in the north, and certain pastoral Tuareg of Southern Ayr have more sheep than goats, though sheep in Ayr suffer from lack of fodder in the dry hot season when they are extremely thin and meagre. With good grazing sheep yield more milk than goats, but 262 otherwise goats are better milch animals. The meat of sheep is considered superior to goat meat, and

food or to sell them when they are five years old. Many rams are killed or sold at a younger age, and 233*
male lambs are frequently killed when half-grown, but the Tuareg do not kill very young lambs.

It is well known from literature that pastoralists of Tibet use sheep as beasts of burden (several authorities; cf. Bell 1928, p. 116; Hermanns 1949, p. 84). Among the Tuareg sheep are not used for [492]
this purpose, but I have seen herdsmen attach their empty water bags to the belly of rams, which are very tall, strong animals.

CATTLE

The oldest African cattle is believed to have been a type of the *Bos primigenius* breed characterized 233*
by comparatively long horns. This breed was known in Ancient Egypt, and also in Prehistoric Sahara, 174
where its former existence is documented by numerous rock engravings (cf. Monod 1932; Gautier 1908; Lhote 1955a, 1958; Erman 1922; Faulkner & Epstein 1957, p. 142 f.). It seems as if cattle of this particular type was found in parts of North Africa even in antiquity (Bates 1914, p. 95 f.), and we can adequately quote Faulkner & Epstein on the former distribution of humpless longhorn cattle in the north: "All along the shores of the Mediterranean, from Palestine through Egypt to North West Africa, and from Asia Minor through the Balkans to the Appenine and Iberian peninsulas, an ancient stratum of longhorn cattle can be traced, extending to the north and south as far as Mediterranean man or his culture spread" (Faulkner & Epstein 1957, p. 143). *Bos primigenius* cattle are 233*
still found in certain parts of Africa. It is known in isolated regions of the Western Sudan – notably 171
in Guinea and Liberia (cf. Doutressoulle 1947, p. 79 ff.; Faulkner & Epstein 1957, p. 87 ff.; Johsi, McLaughlin & Phillips 1957, p. 118 ff.). It is perhaps this breed to which Maqrizi refers in his description of the Beja (Maqrizi, p. 561). The very special thick-horned Lake Tchad breed is probably to be considered a *Bos primigenius* type (Doutressoulle 1947, p. 88 ff.; Faulkner & Epstein 1957,

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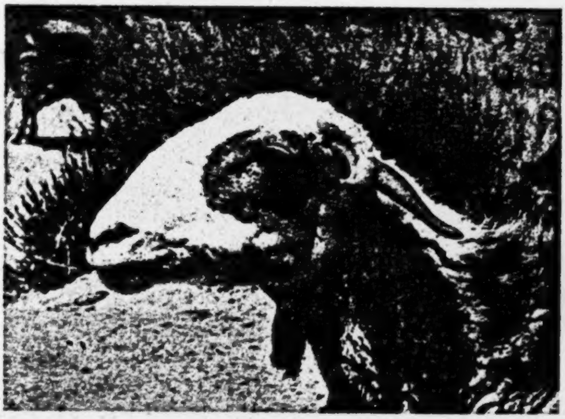

Fig. 26. Young ram of the hairy *Ovis longipes* breed. Ahaggar.

[text continues on p. 49]

p. 93 ff.), and this seems to be true partly also of the so-called Watusi-cattle and related breeds, which 233* have been mixed with zebu-cattle and therefore frequently have well developed humps (cf. Adametz 171 1920, p. 10 ff.; Faulkner & Epstein 1957, p. 148 ff.; Johsi, McLaughlin & Phillips 1957, p. 146, 178, 259).

Adametz believes that zebus were introduced into Africa from Northern India about 2000 B.C. 233* (Adametz 1920, p. 10 ff.). Nowadays Zebus no doubt form the most important types of cattle in 174 Africa, and Tuareg cattle are of the zebu type. The West African zebus fall into a number of sub-breeds described in detail by Doutressoulle. The zebu type found in Ayr and adjacent regions and also introduced into Northern Tuareg country is known as the *Azawaγ* breed (Doutressoulle 1947, p. 102 ff.). In Southern Ayr, which nowadays has a fairly large population of pastoral Fulani, a particular type of zebu is also very common. This zebu is characterized by very high stature and extremely long horns often resembling the form of a lyre (Fig. 27). This breed is named Borodji, Bororo, or M'Bororo. The Fulani zebu is esteemed by certain Ayr Tuareg because of its fatter milk, but it is 262 claimed that its meat is not so delicious as that of their own cattle.

Pastoral Tuareg of Ahaggar and Tasilé-n-Ajjer do not breed cattle (zebus), which do not thrive in their barren countries where pastures of annual plants do not regenerate annually. An attempt to breed zebus among the pastoral Ahaggar Tuareg some years ago failed, and zebus are nowadays found only among settled agriculturists who use these animals as draught-animals at irrigation wells (p. 189; Fig. 132 a–b). A few agriculturists also have cows to raise calves, and to utilize their milk. It is comparatively easy for settled agriculturists of Ahaggar to keep cattle. In dry years, and when pasture is scarce and dry in the hot season, cattle can be fed on vegetables and the straw of certain plants grown in the garden. It can also be mentioned that many agriculturists live in the very broad river 361 valleys of lower Ahaggar where water is not very deep under the sand, and at some agricultural settlements there are even permanent springs. In such places (e.g., the settlements of Abalessa and 137 Amsel) there are even in dry years fresh grazing of a few permanent plants suited to cattle, notably the four following species:–– *tahlé* (*Typha elephantina*), *tésenġelt* (*Saccharum Ravennae*), *ilegga* (sing. *aleggi*) (*Scirpus Holoschoenus*), and *taysest* (*Eragrostis bipinnata*). The regeneration of these plants is not dependent upon annual rainfall, for the soil is always sufficiently humid for their annual regeneration. Therefore it is very common in Ahaggar (e.g., at Abalessa and at Amsel) to burn down the old 224 dry plants late in winter so that new fresh plants can germinate in spring. This method of renewing pasture by the burning down of old dry plants is not generally possible in desert countries. In Ahaggar it is practised only for the four above mentioned species within very limited humid areas, and the method is said to be entirely unknown in Ayr.

The Ahaggar agriculturists who possess oxen very frequently use these animals for riding, sitting 492 on the hind part of the animals which are kept under control by means of a rein (*taẓerkit*) placed through their nostrils, or by means of a halter. No saddle is used apart from a casual piece of cotton, or a blanket (Fig. 28). In Tasilé-n-Ajjer, it is said, the settled farmers have no cows but only bulls and oxen to be used at irrigation wells, and these animals are not used for riding as in Ahaggar.

The zebus found in the settlements of northern agriculturists are all introduced from the south where conditions for ox-breeding are much more favourable. Many, and perhaps most, northern zebus have come from Ayr from which region they are still introduced to Ahaggar and Tasilé-n-Ajjer.

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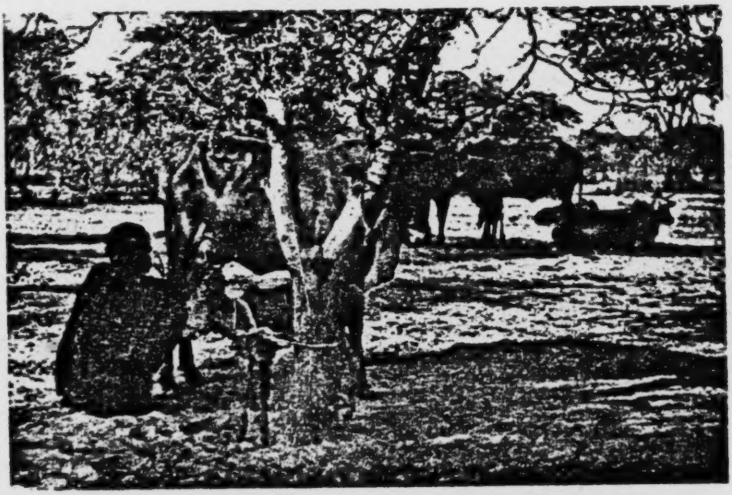

Fig. 29. Milking a cow. The calf is attached to a tree by means of a cord (*témetrek*) around its neck, the mother cow being attached to the same tree with a cord (*aγan*) around its horns.
Ayr, Tuareg of the *Kel Ferwan* group.

*233 Zebus are able to cross the barren desert country of the Sahara in winter, and even with so hot a temperature, as that prevailing at the end of April, I have met Ayr Tuareg of the *Kel Tédalé* tribe leading zebus from Northern Ayr to Tamanṛaset in Ahaggar.

The Ayr Tuareg seem to admit that they have always had zebus, but they say that in the past they had very few cattle. Nowadays there are zebus in so to speak all camps and villages of the Massif and in the plains to the [illegible] of it. At the village of Iferwan sedentary farmers possess three to four animals per household, and figures are much bigger for households of true pastoralists. It is quite normal for a nomadic household to possess a dozen zebus, and this is true even of pastoral Tuareg roaming in the northern outskirts of Ayr where precipitation is lower than in the south.

In fact zebu-breeding is a very profitable industry to the nomads, the more so as very little work is connected with it. The animals leave the camp early in the morning to return again entirely by themselves in the evening before darkness. They are never accompanied by herdsmen as there are no beasts of prey strong enough to attack them nowadays. I have met Tuareg who were evidently very fond of
● [171] their zebus, but they never showed the same interest towards their cattle as do the Fulani, who always accompany their herds. During grazing Tuareg zebus normally roam freely, but certain animals which are difficult to get hold of are provided with a cord (*aγan*) around their horns to which cord is attached
[366] a long piece of wood trailing on the ground. When oxen are driven to the market place (at Agadez
or Ingal) for selling,

or Ingal) for selling, they are also frequently provided with a wooden prong (*aburl*) loosely attached 233* around one foreleg to prevent them running away. I have never seen this practised among the Fulani [171] who have much more control over their cattle than have the Ayr Tuareg.

Cows continue to bring forth calves and yield milk until they are about 15 years old, and the duration of their life is estimated at about 20 years. But it is considered appropriate to keep milch-cows until they are ten or twelve years old when they should be sold or killed. The period of gestation for cows is about ten months, and there is no regulation of mating. The Tuareg say that cows will be on heat and mate again shortly after the birth of a calf, and that milk-yielding does not stop until five months after mating. Free mating of the cows agrees well with Tuareg interests as prices of calves are high. [435]

Milking of cows takes place twice daily and is generally done by women – in rare cases by men. 234 Milking is performed as follows:— Just before the herd returns from grazing in the evening every [462] calf is firmly attached to a tree by means of a cord (*témetrek*) around its neck so that it cannot reach the udder of the mother cow. When milking is to take place the mother cow is attached to the same tree by means of a cord (*aɣan*) around its horns. The calf's rope is now loosened and it will immediately start to suck while the milk-maid fastenes another rope or cord (*akarab*) around the hind legs of the cow. When this is done the calf is attached to its tree again, and milking begins. The milk-maid squats at one side of the cow (generally at the right side) holding the large milking bowl (*akabar*) (Fig. 37) between her legs and knees, and milks with both hands (Fig. 29). When the milk-maid has taken the milk she wants she releases the calf to let it drink what is left in the udder, but the calf is thereupon attached to its tree again in order that it may not suck during the night. Before the cows leave the camp in the morning milking is performed again as just described, but it may happen that the cows leave for grazing already during the night, and they are then not milked again until next evening. Tuareg who possess a great many calves may guard them within a so-called *zeriba* (*afaraɣ*) made of [417] thorny acacia boughs.

Most cows will not yield milk unless they have their calves close to them. If a cow loses its calf it [237] may be replaced with the calf of another cow so that milking can be done, but it is also common to use the so-called dummy-calf (*azeyuz*) made from the dead calf's skin stuffed with hay. This puppet is then set close to the cow which is deceived by it. It feels that its calf is standing by, it licks the skin, and milking can then be done without much difficulty.

The dummy-calf is not used by the zebu-owning agriculturists of Ahaggar, though I have met one of these *Ḫarratin* (*Izeggaɣen*) who had once made a calfskin-puppet after he had seen the method practised among *Ifoɣas* Tuareg at Kidal. The method of blowing into the cow's vulva is known to the Ayr Tuareg as *askuf*; it is used particularly for cows which are difficult to milk shortly after the birth of a calf. During migrations, when young calves march together with the mother cows, suckling is prevented by means of a piece of dum palm leaf attached around the calves' mouths. Such an attachment known to the Ayr Tuareg as *adabaɣ* may be used also for other domestic animals.

Weaning of calves takes place according to one of the following methods:— (1) *ikembar*, that is 233* cuttings made with a knife in two or three places on the bridge of the calf's nose. The wounds of these cuts hurt the calf when it tries to suck, but the method is effective only for a very short period until the wounds have healed. On adult animals the scars of these wounds appear as small bumps (Fig. 30).

CAMELS

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Camels are very important domestic animals in all Tuareg groups, and they also play a great part in the subsistence of most Arab pastoralists of the Northern Sahara. The common Arab camel breed, which is known to the Tuareg as *marroki*, is also found in Northern Tuareg country – particularly among the *Kel Ajjer*. It is heavily built and is extremely well fitted for transportation. It is a very strong breed in spite of its relatively low stature, and it has large feet which is considered an eminent quality for pack camels. This *marroki* camel has a thick cover of wool on the hump and on the forepart of the body, while Tuareg camels, which are of higher stature and more elegantly built, in general have little or no wool, but only a short coat of hair much like that of cows and horses. Tuareg camels may have long hairs around the hump but true Tuareg camels have no proper coat of wool. Though the *marroki* breed is excellent for transportation and is considered a better milch-animal than the southern Tuareg breed, the Tuareg generally prefer their own elegantly built camels, and they look down upon the heavily built camels of the north. However, as mentioned, there are some *marroki*

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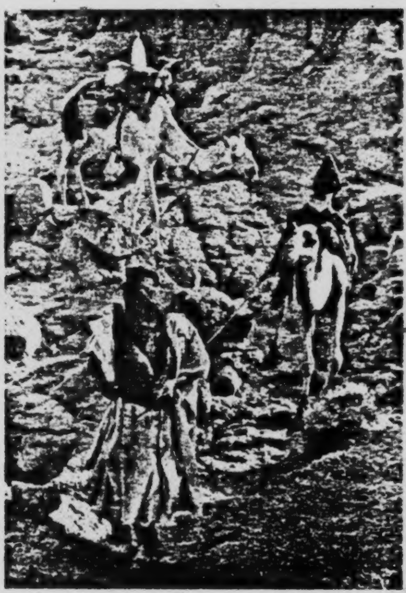

Fig. 33. Tuareg with riding camels. Ahaggar, the *Aguh-en-tehle* tribe.

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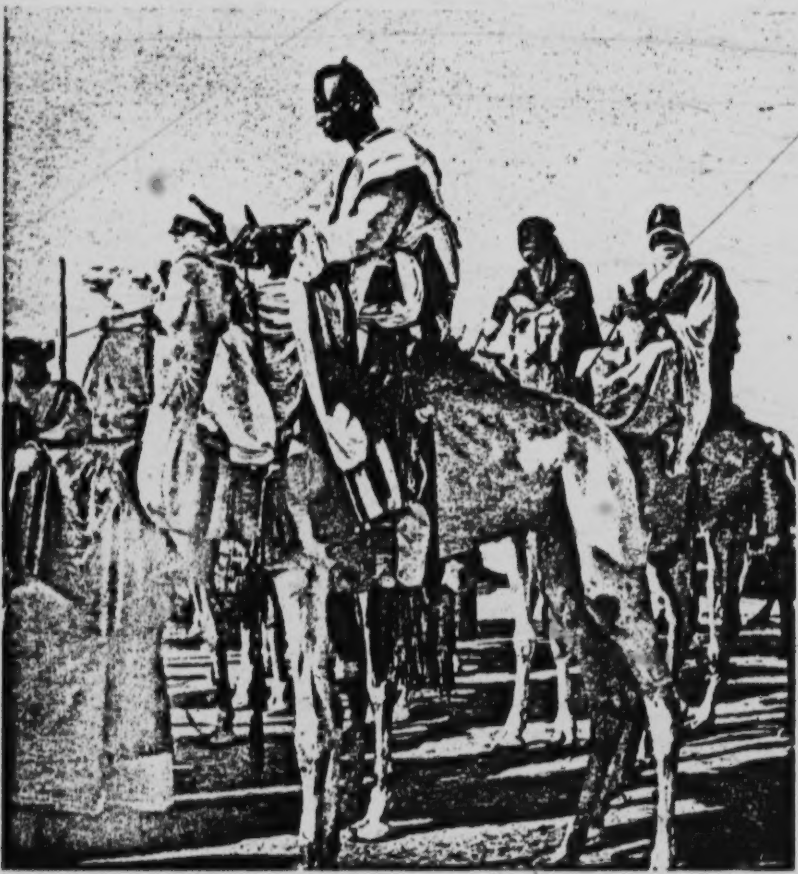

Fig. 34. Tuareg camel riders. The young man seen in the front has not yet adopted the veil. Ayr, Agadez.

camels among the Northern Tuareg, as there are cross-breeds between camels of this type and Tuareg 233*
camels. There are also to-day some Tuareg camels among Arab pastoralists of the Sahara, but I was [7] ●
told among *Ulad Ba Ḫammu* Arabs that originally all their camels were of the *marroki* type, while
camels of the southern Tuareg breed were introduced among them more recently. I have not been [214]
able to prove or to refute Cauvet's theory that northern and southern camel-breeds differ in dentition

*233 *492 should be remembered that she-camels possess less endurance than bull-camels and geldings on very long journeys.

*233 She-camels and the few bull-camels which are reserved for breeding graze free and unhobbled; pack and riding animals are hobbled with a short rope between their forelegs during grazing. Both in Ayr and among the Northern Tuareg this hobble-rope is known as *téllart* (Fig. 45b–e). In Ayr it is generally [137] rather short because pasture is rich in the valleys where camels are also difficult to find because of the dense vegetation and because the animals frequently leave no trace. In the two groups of Northern Tuareg, vegetation is on the whole more scattered and camels have to wander more freely to find suitable fodder. The Northern Tuareg therefore in general use a somewhat longer hobble-rope, and they find their animals again without much difficulty because of the open country and because the camels leave foot-prints which differ from one animal to the other. When the camels are out of sight they are easily traced by the Tuareg who know their foot-prints. The Ayr Tuareg make their hobble- [283] ropes from dum palm leaves twisted together, while Northern Tuareg use bast of the date palm trees, which latter material is considered the better for hobble-ropes. If hobbled camels are left to themselves for longer periods the Northern Tuareg also use ropes made of goat's hair or ox hide as such ropes do not so easily break (cf. Fig. 45c, e).

●[171] Arab pastoralists of the Northern Sahara do not always let their camels graze during night but frequently keep them lying in front of the tent after darkness; the animals are then tied around one of their forelegs by means of a short rope provided with a small stick. The same device (*asarun*) is also known to the Northern Tuareg (p. 67, Fig. 45a), but it is unknown to the Ayr Tuareg who use for this purpose a short rope (*arenfud*) without a stick and made from twisted dum palm leaves. The Tuareg may keep camels in the camp during night and then tie one of their forelegs with the ropes mentioned. This is done with she-camels which rest close to their calves at night time, and in Ayr also with most camels during the short period of the year (*akasa* and the beginning of *rarat*) when dew falls heavily upon annual pasture, for camels may contract stomach diseases from eating wet annual plants. In Ahaggar I have noted that camels are attached in the way mentioned and kept in camp during the night in order that they might not eat noxious plants growing close to the tents (cf. p. 124). However, camels normally graze during the night and do not sleep much. On the very long trading expeditions they eat almost exclusively through a few hours of the night. When a camel sleeps it stretches out its long neck in a slightly curved position and its head rests upon the chin (cf. Fig. 46). It sleeps very lightly, and the Ahaggar Tuareg say that a boy who is able to creep under the neck of a sleeping camel and not awake it will never loose his way in the desert.

*492 Pack-camels of a Tuareg caravan walk one behind the other in a long line. Every pack-camel is provided with a rope noosed around its lower jaw, the loop being prevented from loosening by the [283] insertion of a small stick (Fig. 47). This rope is known as *akala* to the Ahaggar Tuareg, who use ropes made from twisted pieces of date palm bast, while the Ayr Tuareg make similar ropes from dum palm leaves. The loose end of the *akala* rope is attached to the pack-camel walking in front, fastened either to its luggage or, more frequently, to its neck around which camels of a caravan carry their hobble ropes.

*233 *492 True halters made from goat's hair or from palm material are used mainly for young untrained

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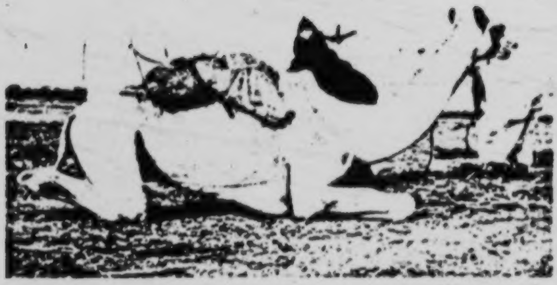

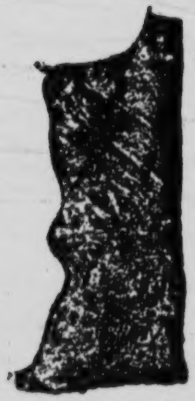

Fig. 53. Pack camel with the saddle consisting of two skin-bags (*imaytalen*) stuffed with hay. Ayr, the *Imezzureg* tribe.
Fig. 54. A skin bag (*amaytal*, pl. *imaytalen*) of the type used for pack-saddle. Ayr, the *Imezzureg* tribe. Dimension: ca. 0.80 m. (N.M. G. 6658).

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leather fringes (cf. Fig. 52). Some very elaborate halters are found in the Musée de l'homme (Nos. 5.66.5; 30.61.228; 95.46.3; D $\frac{34}{1}$ 42; D $\frac{34}{1}$ 25).

×492 Foucauld describes a peculiar method for leading camels, as follows:— A little wooden stick (*ağula*) is stuck into the skin between the chin and the lower jaw of the animal, and the lead is attached to this stick. The method is practised with camels which have no nostril ring and cannot be led by means of a rope attached around their lower jaw (Foucauld 1951–52, I, p. 426). I have seen this peculiar method practised once in Ahaggar.

Pack-camels are rarely used without some type of saddle, but it happens that camels are used for water-transportation from the well to the camp without a saddle. The waterbags are then hung over the animal's back, their cords resting upon a layer of straw or sprays. In Ahaggar, and more so in Ayr, it is also common instead of a proper saddle to use two skin-bags filled with grain, straw, or the like to form cushions. One of these is placed before, the other behind the hump so that the cords of luggage bags can rest upon them (cf. Fig. 53–54). These cushions are known as *imaytalen* (sing. *amaytal*), and they may serve as a pack-saddle even on long journeys, though the Tuareg in general use proper saddles on trading expeditions.

● [171] Pack-saddles of the Northern Tuareg correspond to saddles found among the Arabs of the Sahara. The common type is that known to the Arabs as *ḥawiyya* or *ḥidâğe*, and called *élaki* by the Northern [824] Tuareg. It consists of a wooden frame (*élaki*) generally made from pieces of palm leaf ribs (Fig. 55). [284] It is made up of two crossbars placed close to each other, each of them being composed of two short and slightly curved pieces of palm leaves' ribs lashed together at the top with raw camel-hide. The

*492 fixed with a rope running under the tail and/or a rope around the camel's chest. The *elakl*-saddle is [184] unknown to the Ayr Tuareg, but I have seen it in use among Arab traders living at Iferwan of Northern [171] Ayr. It is by far the most common type of pack-saddle in both groups of Northern Tuareg.

Another type of pack-saddle named *tebeyut* or *tkhawit* corresponds to the *herej* saddle of the Arabs. It is used occasionally by the Northern Tuareg, but I have only seen it among the *Kel Ajjer*. The saddle-frame is made from date palm ribs and consists of two cross-bars connected with each other by two crossed sticks at both sides. One of the cross-bars rests in front of the animal's hump, the [283] other behind. The frame is lashed together by means of strips of raw camel-hide and is fastened to two pads of palm bast as can be seen from the photograph Fig. 57. As far as I know this saddle-type, [563] like the type above-mentioned, is manufactured by palm-growing agriculturists of the oases. This saddle type seems to be unknown among the Ayr Tuareg.

The proper pack-saddle used among the Ayr Tuareg is known to them as *arukl*. It consists of one [285] wooden arch lashed to two flat boards (Fig. 58). These two sideboards are attached to two pads made from hay stuffed into tubular pieces of dum palm matting. The two pads or mat cylinders are fitted on each side of the camel so that the wooden arch rests in front of the hump. But there is also a rear pad consisting of a stuffed skin-bag laid over the camel's back behind the hump and attached to the wooden arch by means of cords. The loading cords bear on this stuffed skin-bag and on the mat- [564] cylinders in front of the wooden arch. The wooden arch is manufactured by blacksmiths, while the side pads and rear pad are made by the Tuareg. The saddle is not generally fixed to the camel by means of girths or cords. The place of origin for this saddle-type seems to be Ayr. It is used also among the *Kel Geres* Tuareg, and it seems as if related saddle-types occur elsewhere in the south (cf. p. 311).

*492 415 Transportation bags of various types are used for camel loads, but the very large bags woven from a mixture of goat's hair and camel's wool so typical of northern Arab pastoralists are not in current use among the *Kel Ahaggar* and the *Kel Ajjer*, and are entirely unknown to the Tuareg of Ayr. The [563] Northern Tuareg generally use bags made from the skin of barbary sheep, or bags made from date palm bast by the sedentary agriculturists of Tidikelt (cf. Fig. 59). In Ayr the Tuareg normally use transportation bags of plaited dum palm leaves.

The ideal load of a camel consists of two bags forming a total weight of up to 200 kgs for a very strong animal. The two bags, which together form one load, are each provided with two short loading loops. They are known to the Ahaggar Tuareg as *elferwet* when bags are woven, as *tadekmert* when the bags are of skin. The loading is done as follows: — The two bags are lifted up and supported against the sides of the recumbent pack-camel by two men who put the loops of one bag into those of the other and insert between them two little sticks, known in the north as *tihdad* (sing. *tehedit*). To unload the camel all one has to do is to pull out the two small sticks inserted between the loops, [171] and the two bags fall to the ground. This same system is also used in Ayr, and, I believe, among all camel-breeders of North Africa. - To secure the load in a fixed position it is very common to surround its two halves with a rope (*takhamlt* in Ahaggar), which is laid over the saddle-frame before loading and another rope around the luggage and the belly of the pack-camel is also used if considered necessary.

*492 When camels are taken to the camp from pasture, they are sometimes mounted without a saddle

[text continues on p. 78]

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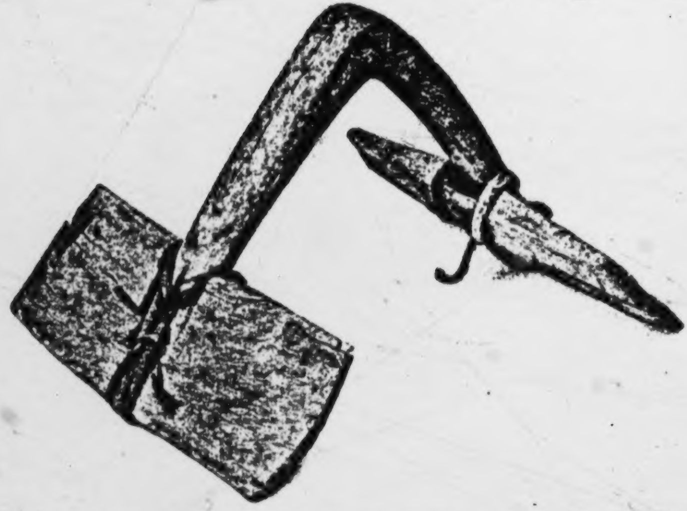

Fig. 58. Wooden saddle frame of the *aruki* type. The curved piece of wood is fastened to two boards with strips of raw hide. The frame is manufactured by an Ayr blacksmith. Bought at Tamanrasset. Dimension: 0.337 m long, 0.275 m high. (N.M. G. 5247).

*492 by men and boys, who sit sideways in front of the hump resting their feet upon the animal's neck, or,
● [171] more rarely, behind the hump with their feet hanging down, as is the custom of Arab pastoralists of
the Northern Sahara. It should be added that on long trading expeditions the Tuareg frequently content
themselves with sitting on the top of their loaded pack-camels. But riding in these ways is not very
pleasant, and whenever possible the Tuareg use proper riding saddles placed in front of the camel's
hump so that the rider sits cross-legged in the saddle with his feet resting upon the lower part of the
animal's neck.

Most Tuareg have saddles of the well-known type with a cruciformed pommel. This saddle is known
[531] as *térik* which term is used for three distinct sub-types. One is known as *tekokeyt* (Fig. 60); it differs
from the type known as *tamzak* mainly therein that the latter is provided with peculiar ornaments
and designs (Fig. 61). These two saddles are those normally used by the Tuareg, while the third sub-type known as *bertekes* is extremely rare; it resembles the *tamzak*-saddle, but is provided with many
[564] small bells fastened to be back (Fig. 62). Such saddles are hardly ever manufactured by the black-smiths of Northern Tuareg countries, but are made in Ayr, notably in Agadez, where the Northern
[432] Tuareg also buy their riding saddles. Even the Arab pastoralists of the tribes *Chamba* and *Ulad Ba*

[text continues on p. 80]

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Fig. 82b. Cf. text Fig. 82a.

qualities as strength and speed, but rather on elegance and sublimity. The riders sit straight in the 526
saddles without watching the crowd of women, and the camels are ridden at a gentle trot (generally 492*
that known as *senat-senat*; cf. p. 99) with their heads drawn back. In this way the men may also ride 585
their animals round the women in a circle as I have seen in Ayr (cf. Fig. 82).

Camels have important social functions among the Tuareg who take an interest in these animals 233
far beyond their practical value. It may perhaps be useful to compare Tuareg interest in camels with 181
Nuer interest in cattle so brilliantly described by Evans-Pritchard. Nuer caress their animals, and 171 ●
there is a tendency for human beings and cattle to form, so to speak, a single community (Evans-Pritchard 1940, p. 16–50). This is not exactly true of Tuareg and camels. The Tuareg do not pat their camels which will not respond to caressing, and they do not live in very close contact with their animals, most of which frequently graze far away from the camp under the supervision of one or two herdsmen. But the Tuareg nevertheless have much the same feeling towards camels as Nuer have towards
their cattle. They are very fond of their animals. They may abstain from camel's flesh because they 262
are fond of camels and would feel very sick at heart when eating them. But though the Tuareg are fond of camels as such, they are delighted particularly at the sight of a very fine camel (*akemhur*;
Ahaggar) and may even speak disparagingly of a badly built animal (*amugey*; Ahaggar). Fine camels 554
add to the prestige of a man, while too many animals of poor build may even harm his reputation.
When girls and young women praise camel-riders in their songs they praise those mounted on fine 533
and richly-decorated animals. When camels are mentioned in poetry this may also be done as praise 538
to their owners, as in a poem composed in honour of noble Tuareg of the *Uraren* (*Kel Ajjer*) of whom it is said that "their pack-camels have feet as large as a drum, and the loads they carry are like the
crests of mountains" (Hanoteau 1896, p. 218). Such reference to pack-camels, however, seems to be 492*
rare in Tuareg poetry, while riding camels are frequently mentioned in connection with warfare and
love. Riding camels have much the same esteemed position as had horses in Medieval Europe. Tuareg 171
interest in camels is particularly focused on riding camels and there is a tendency towards identification 492*
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wild the Ayr Tuareg also know another type of snare, or rather lasso, which is also known as *turunt*. 231
It consists of a long rope noosed at one end, but the loop in this case is thrown against the animal 224
by means of a short forked stick. The *Kel Ferwan* Tuareg say that this type of lasso is not widely found [171] ●
among them, and claim it is typical of and traditional for the pastoral Fulani, who use it to catch cows which are difficult to approach.

The wild donkeys caught for domestication are young animals, for very old ones cannot be tamed. 231
When an animal is caught by one of the above mentioned methods it is beaten a heavy blow between the ears so that it falls unconiscious to the ground. It is thereupon given a rope around its mouth, for wild donkeys are fierce and have a dangerous bite, and is also tied with ropes around its legs so that it cannot run. When the animal comes to after the blow it is led to the camp where it is tethered. It remains tethered and fitted with hobble-ropes in the camp for one or two months during which period it gets a very brutal treatment. It is trained for riding by the men who mount it daily during [492]*
this period of training (cf. Fig. 85) until it can be ridden as freely as domestic donkeys. The Tuareg say that not all donkeys survive the heavy blow on the head but that most of them do.

Donkeys constitute the important riding animal of all vassal women, and there are also some men 492*
of the true vassal class who ride donkeys though most of them have riding camels. Donkeys are also [562]
extremely important pack-animals. They are used by most Tuareg for the transportation of tents and [565]

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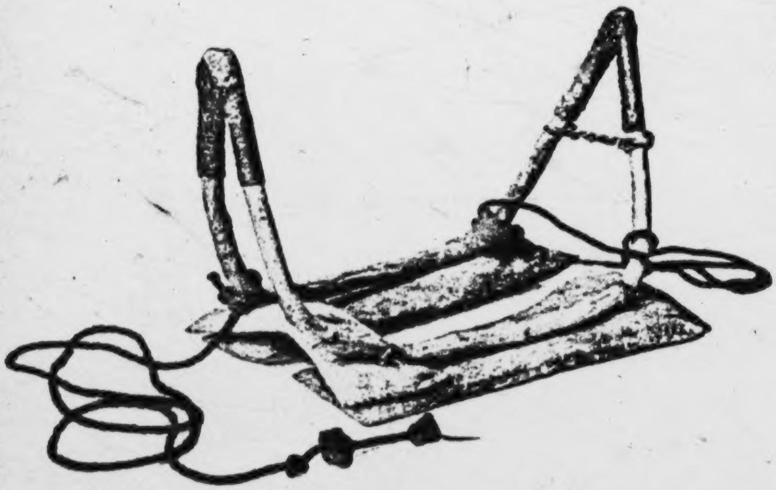

Fig. 86. Donkey saddle (*aruku*) of the type described in detail in the text (cf. p. 110). It is fixed to the animal by two cords of goat's hair: the girth (left), the cord passing under the tail (right). Ahaggar, the *Dag Ɣali* tribe. Dimension: 0.585 m long, 0.360 broad. (N.M. G. 5246).

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*492 Tuareg. Some Ayr Tuareg use a kind of saddle for the transportation of water-bags. It consists of two pieces of wood with grooves to support the cords of the water-bags; it corresponds to the type of saddle described and depicted by Lhote from the *Iullemmeden* (Lhote 1947a, p. 114, 134) which type I have seen also among the *Kel Tahabanat* of the *Kel Ataram* group. However, most Ayr Tuareg do not employ this device. They content themselves with a layer of thin green twigs placed on the donkey's
T back so that the cords of the water-bag, which hangs under the animal's belly, shall not hurt and gall.
[484] This method is also sometimes used by Northern Tuareg. To transport the tent and its belongings during nomadic migrations, the Ayr Tuareg use one or two rolled-up mats of the tent-covering for saddle, while on trading expeditions to Damergu they place their skin-bags filled with millet directly on the donkey's back. Such bags (*alelu*) may also serve as a kind of saddle for luggage. When the Ayr
T Tuareg ride donkeys they sit on the naked back, on a blanket, or on a piece of matting. The Tuareg
● [171] never use bridle, bit, or rein for riding as do some people of the northernmost parts of the desert and the Atlas. They control their donkeys with a short stick and constantly beat them over the neck to keep up their speed. I have never seen them prick the animal's neck with a spiked stick as is frequently done in the Atlas and adjacent regions. Here many donkeys wear iron shoes which are also unknown among the Tuareg.

HORSES

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231 Horses play a very small rôle with the Tuareg I have studied. There are very few horses in the Northern
[171] Sahara where they are bred mainly by sedentary people who are able to feed their animals on barley,
[565] millet, and other garden products. Some years ago there were a few horses in the noble *Kel Ṛela* tribe of Ahaggar, but nowadays there are no horses among pastoral Tuareg of this region, and in all Ahaggar

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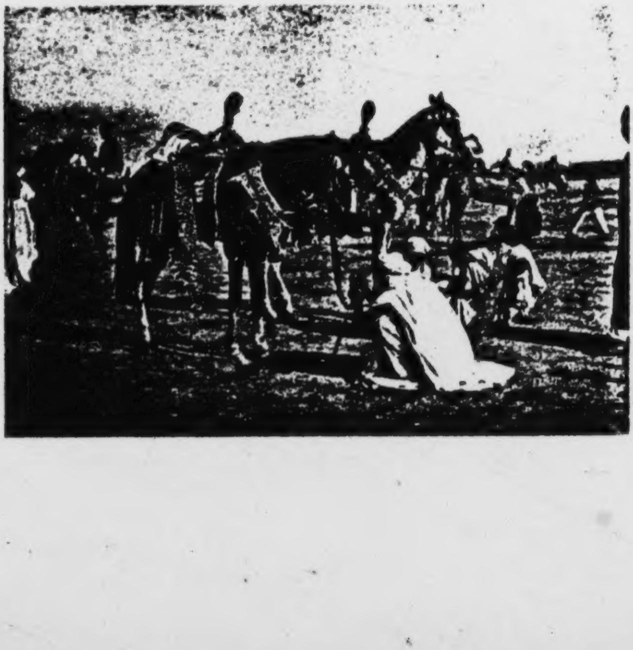

Fig. 87. Hausa Negroes with their richly ornamented riding horses. Ayr, the *Imeggedrzen* of Agadez.

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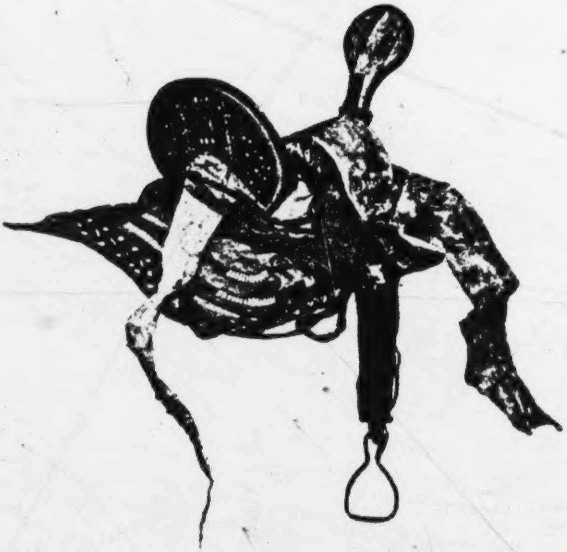

Fig. 88. Riding saddle of the type manufactured at Agadez and used by horse-riding Tuareg and Negroes in Ayr and further south. Note the very narrow stirrups which are often used for the insertion of only one or two toes. (Musée de l'homme, Collection Henri Lhote, 38/617).

231 there are perhaps less than ten horses which are all owned by sedentary people (blacksmiths and
[563] Arabs). Conditions for horse-breeding are better in Ayr, but even there pastoral Tuareg do not generally breed horses which for a large part of the year must be fed on barley, millet, or on milk. In Ayr,
[563] horses are mainly bred by sedentary Tuareg of the *Kel Ewey* group and by the negroid citizens of Agadez who hold horses in very great esteem. There are perhaps 100–200 horses in and around Agadez, where the animals are kept in or at the houses most of the year to be fed on cereals and on hay of annual grasses cut with a sickle (cf. Fig. 143 f). During the period of *akasa* it is common to let the
*492 animals graze on annual pasture, and they are then very tightly hobbled. The Ayr peoples use a bit (*aṛaba*) (Fig. 89) similar to the type used by Arabs in the North, but their saddles are not of the
● [171] general Arab type (cf. Fig. 88). The very broad Arab stirrups also seem to be unknown to the *Kel Ayr* and to the *Kel Geres*, who have many horses. The stirrups used by horse-riding Tuareg are generally very thin and slender, and they are frequently used for the insertion of only one or two toes.
[113] The riding-gear used by the *Kel Ayr* (including the *Imeggedezen*) and the *Kel Geres* is described in detail in literature (cf. Foureau 1905, III, p. 879 ff. & 921 ff.). This is very complete, and was, perhaps,
[175] introduced fairly recently, for we know that the Libyans of Antiquity rode without a saddle and governed their horses mainly by means of a stick (Bates 1941, p. 96 f.), and we are informed by Ibn Batutah that in the Middles Ages the people of Ayr rode without saddles (Ibn Batutah IV, p. 442).

231 The history of the horse in Africa constitutes a very important problem. It is generally admitted
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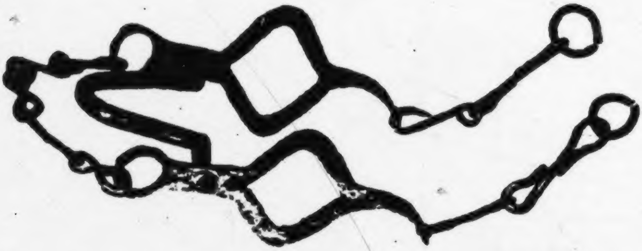

Fig. 89. Horse bit of iron. Made by blacksmith of Ayr, Agadez. Dimension: ca. 0.11 m broad. (N.M. G. 6667).

that the horse was introduced to Egypt with the Hyksos invasion about 1700 B.C. From Egypt it 231 spread to other African peoples, and it was common among the Libyans during the reign of Rameses 174 III (about 1200 B.C.). This first horse-breed introduced among the North African Berbers seems to have been of the pony type (cf. Bates 1914, p. 96 f.; Adametz 1920, p. 46 ff.; Antonius 1922, p. 284) which is still represented in Africa. I believe that the so-called Togo-pony which is found in scattered and isolated parts of the Western Sudan belongs to the old pony-breed, though this theory is not accepted by Doutressoulle on the ground that such ponies are not found nowadays in North Africa and Egypt (Doutressoulle 1947, p. 238). Doutressoulle has made a detailed study of the horse-breeds 231 of the area formerly known as French West-Africa. Apart from the pony-type just mentioned above, 171 ● there are three main types:— (1) the *Aryen type* known in Ayr as the Begzen horse. It is an Arab breed [114] introduced from the North – from Tripolis according to tradition. Horses of this type are found scattered throughout Ayr, Adrar-n-Foras, and Hodh. (2) the *Barbe type* found mainly among the Moors west of Timbuktu. (3) *the Dongolawi type* mainly found to the east of the Niger (Doutressoulle 1947, p. 237 ff.).

Horses become valuable riding animals to many Tuareg living in the true savannah country. The 492* *Kel Geres* Tuareg use horses for short riding trips though they prefer camels for riding on long journeys. They claim horses of the Begzen breed to be the very best riding animal. In the remote past when the 492* horse was introduced into North Africa and the Sahara, horses may have been important also to 174 Libyans and Tuareg living further north in the desert, where the climate may then have been more favourable to horse-breeding than it is in modern times. Lhote has studied the ancient rock-pictures representing horses, horse-riders, and horse-drawn waggons in the Sahara, and he ascribes to the horse very great importance for the opening up of the desert country and invasions into these regions by fair-skinned Berbers (cf. Lhote 1953a). This theory is perhaps supported by the fact that the Ahaggar [192] Tuareg though they do not breed horses have a fairly extensive vocabulary connected with horses and horse-breeding. Briggs states as his opinion that horses were probably never common in the Sahara (Briggs 1960, p. 21). This, of course, we cannot know, but it seems safe to say that in the Sahara the horse has never had the same economic value as the camel later has had.

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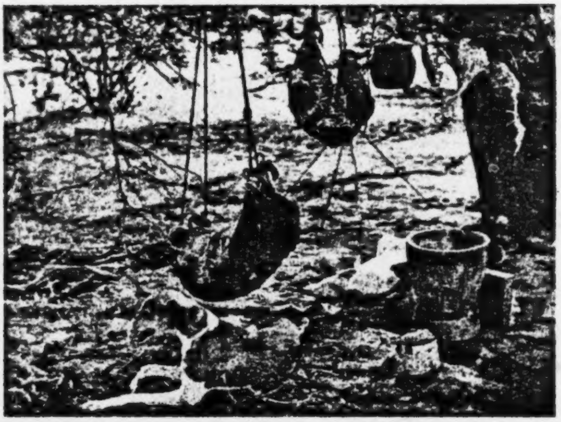

Fig. 90. Tuareg dogs of the breed which is common among the Ayr Tuareg. Dogs suffer much from heat in summer when they hide under water-bags. Ayr, the *Imezzureg* tribe.

DOGS

231 The Northern Tuareg distinguish between three types of dogs (sing. *eydi*) as follows:— (1) a long-
haired breed (*aberhoh*); (2) a short-haired slender breed (*akhami*); (3) a very slender and elegantly
[173] built greyhound (*oska*) (Fig. 91). The Ahaggar Tuareg speak of a tradition, according to which the
greyhound (*oska*) was introduced fairly recently through contacts with the Northern Arabs. The
Ayr Tuareg do not make similar distinctions between dog breeds. They have only one breed which
is known as *ijji* (Fig. 90). It is short-haired and slenderly built though less so than the true Arab grey-
hound.

[136] Dogs are kept to guard the camp and in particular to protect the animals from the attack of jackals
or hyenas during night. If the Tuareg had no dogs it would be most difficult for them to breed goats
and sheep. Dogs may also follow the flocks in daytime to protect the animals against beasts of prey,
though this is not generally considered necessary. Dogs are not trained as "sheep-dogs", but it is
said that a few "intelligent" dogs will assist the herdsman in keeping the flock together during grazing,
[224] and many dogs will drive away domestic animals which belong to foreign flocks. Some Tuareg use
dogs in hunting barbary sheep, gazelle, antelope, and hare (cf. hunting, p. 159, 166).

It is well-known that the Arabs consider the dog an unclean animal. This is also so among Arab
● [171] nomads of the Sahara, but they do not consider their greyhounds unclean in this sense. Thus
pastoralists of the Chamba group told me that among them a fine greyhound is esteemed in much
the same way as are noble riding horses and camels. The Tuareg have very few true greyhounds and
[521] I do not believe that they have this same feeling of interest in them. But many children and young
[541] people are fond of all types of dogs, and one can hear them discuss the qualities of their animals and
the daily dogfights which are considered a kind of entertainment to
everybody in the camp.

Rationality and Beliefs in Stock-Breeding

Literature on so-called primitive pastoralists often states that these peoples are irrational stock- 121
breeders. It is said that they attach an enormous value to big flocks and herds which overgraze and
deteriorate pastures, that they take too little interest in selective breeding with the result that they
do not castrate their superfluous male animals or perform this operation too late, and that they take
an overwhelmingly large interest in the aesthetic qualities of their animals.

Tuareg stock-breeding is essentially rational and is well adopted to environment. This viewpoint 233*
can be proved by reference to the description of stock-breeding given in the preceding chapter. I have 232
here described in some detail the system used in the mating of sheep and goats, and how mating is
regulated in accordance with the development of pastures. From this description of mating regulations
it also appears that the Tuareg are not only interested in having large flocks. They also want flocks of
healthy and strong animals, and they generally kill or sell domestic animals before they grow barren.
It should be added that the Tuareg very well know that there is a limit to the number of animals (goats
and sheep), which can be herded in one and the same place. The Tuareg certainly want to be rich [556]
and to possess large flocks and herds, but they are also aware that there is a limit to size. Regarding
Tuareg interest in the aesthetic qualities of their animals, I have mentioned that it is mainly focused
on camels, and I have described in some detail the value attached to colours. It is clear, however,
that the Tuareg interest in their animals is not confined to the aesthetic. The true value of any domestic
animal is always judged rationally, and takes into consideration such qualities as age, build, stature,
and the like. The Tuareg also know that qualities of domestic animals are inherited and are aware 232
that it is necessary to have good breeding animals. Cauvet states that pastoral Tuareg attach very
little importance to the quality of she-camels used in breeding, while greatly interested in the build
and stature of bull-camels. In this, he says, the Tuareg differ from Arab pastoralists, who think that [171] ●
camel calves inherit their qualities mainly from the mother-camels (Cauvet 1925-26, I, p. 348). This [114]
statement, I believe, is not quite correctly expressed, for the Tuareg I have asked about this have stated
that a camel-calf inherits qualities from both parents and they have also stressed the necessity of having
good she-camels to produce the best possible calves. But most Tuareg have so few camels that they
are forced to mate all their she-camels. They cannot afford to select certain she-camels for breeding,
while it is easy for them to select one or two good bull-camels. All Tuareg I have asked admitted the
great value of selective breeding, and said that superflous rams and he-goats should be castrated or

[p.117]

The most dangerous African cattle disease is the rinderpest. It is known to have entered Egypt in T 231
the year 1884 from the regions around the Black Sea, and about 1890, or somewhat later, it came to 171 ●
Eastern Africa and to the Sudan. Rinderpest is nowadays widely found in Africa but it is rare or
unknown in Northern Tuareg countries. Rinderpest is apparently very rare in the Ayr Massif and it T
occurs mainly south of the Massif in savannah country. The Tuareg have no remedy against this 232
disease. It is stated by St. Croix that the Fulani of Northern Nigeria once deliberately exposed their F
cattle to mild rinderpest to make them immune from this disease in its more severe and dangerous 232
form. However, this method did not work and the Fulani gave up further experiments of this kind.
It is also mentioned by St. Croix that the Fulani practise a kind of vaccination against cattle pleuro-
pneumonia and that this is done as follows:— A piece of infected lung is put into milk for two to three
days and thereupon placed into a small opening cut under the nose-skin of the animal. The method
is claimed to be effective (St. Croix 1944, p. 24 f.). Vaccination methods are also known to some of T 232
the Southern Tuareg, e.g. the *Iwllemmeden*. These people vaccinate human beings against small-pox [751]
by inserting the pus of this disease into wounds cut with a knife (Aymard 1911, p. 108), and they also
vaccinate their cattle against cattle pleuro-pneumonia ("peripneumonie bovine"). They do this in
much the same way as described above for the Fulani:— An infected piece of lung is placed in sour
milk or in the soil for a few days, and is thereupon inserted under the skin of the forehead. Nicolas
describes the method as dangerous because the infection attacks the whole forehead and also the
nose-bone (Nicolas 1950a, p. 133), but two veterinary surgeons who practised among the *Iwllemmeden*
of Tawa told me that they considered this kind of vaccination effective. The method is unknown among the Ayr Tuareg of the Massif where this contagious lung-disease is unknown or
very rare.

I have no great knowledge of the contagious diseases in the Tuareg groups I have studied, but such T 231
diseases seem to occur comparatively rarely, and there is no veterinary surgeon attached to the French 648
administration of Northern Tuareg countries. There is one veterinary surgeon in Agadez, but his
most important field of work lies outside of the mountain massif to the south.

Among the *Kel Ferwan* Tuareg of Southern Ayr I have been told about two contagious diseases T 231
which, when they occur, may give rise to very heavy losses. One of these diseases is known to the T
Tuareg as *changa*. It attacks only cows, which die very quickly, but if cattle suffering from the disease [262]
are ritually killed their meat is nevertheless considered edible. One Tuareg told me that some years
ago about thirty cattle of his camp died in one day from an attack of *changa*.

The other contagious disease I have recorded from Southern Ayr is called *tandert*. It attacks sheep T 233*
and goats, and I collected the following notes about it:— The blood penetrates the animal's flesh 262
which becomes quite red. If sheep or goats suffer from *tandert* and are ritually killed for eating, very 252
great care must be taken in the preparation of the meat. It must be boiled until it contains no blood,
and must not be eaten until it is cold and dry. It is said that if these precautions are not taken the T
people who eat meat from animals suffering from *tandert* will themselves become attacked by the [753]
disease, with the result that blood and pus may penetrate the skin at any part of the body. They say T
that a man who has eaten unboiled meat of an animal suffering from this disease with consequent 757
infection is treated in the following way:— A species of ant more venomous than the normal small

778 Religious beliefs also interfere with Tuareg stock-breeding and create usages of an irrational kind.
231 Thus the Tuareg, like other North African peoples, firmly believe in the mystic benevolent power,
171 or benediction, known as *elbaraka*. This is a power that emenates from God. It is given by God to
784 man and it cannot act unless certain taboos, or rather religious prescriptions, are followed. The benediction
783 *elbaraka* is more than anything else hurt by impurity. Cleanness is an absolute necessity for this good force to be sustained in the same way that a man cannot approach God through prayer if
841 he be unclean. Women are considered unclean during their periods of menstruation and cannot, there-
262 fore, then pray to God. They are also forbidden to drink the milk of domestic animals which have very young kids, lambs, or calves, and they must not drink water which has been conserved in newly-made skin-bags. These taboos are maintained in order not to hurt the benediction given the animals
778 by bringing it into contact with impurity. For the same reason milk taken from animals which have
784 recently brought forth young should not be given to strangers – they might be unclean and harm the
234 *elbaraka*. It is also believed that soil is an impurity dangerous to *elbaraka*, and milk must never be spilt on the ground. Even when milk-bowls are cleaned with water, this liquid should be poured out upon plants or stones, and never be spilt on the ground. Should this be done, God will withdraw his *elbaraka* and the result will be severe periods of drought without milk. I have frequently heard Tuareg ascribe the lack of rain and the dry pasture – the lack of *elbaraka* – to the fact that somebody had spilt milk upon the ground. This had caused God to be angry and to withdraw his benediction. Some Tuareg have also said that *elbaraka* is harmed by a person who blows upon milk. When a man drinks milk he must not blow away impurities before drinking but must remove them by means of a piece of straw.

*233 In the two groups of Northern Tuareg and also in Ayr it is considered very disgraceful for a person
577 who watches the animals away from camp to drink milk directly from an animal's udder. Some Tuareg
272 say that a man when staying alone among milk-yielding animals should not utilize their milk even if he performs milking in the usual way. A person who breaks these rules is called *émenkes* or *émelded* among the Ahaggar Tuareg, *émelded* in Ayr. The Tuareg say that there are some people, and in particular many slaves, who do not follow this rule, and that they are despised if known to have broken it. When two or more people are alone with a herd or flock away from the camp they can freely utilize the animals' milk. And it is very normal for camel herdsmen to live with a herd of she-camels in isolated places for long periods. They then live almost exclusively on camel's milk taken from the herd they guard.

272 Certain usages connected with stock-breeding are rationally explained by the Tuareg. Thus when they heat milk by means of hot stones (cf. p. 221) put into the milking bowl, they claim that this is done in order that the milk shall not get dirty as would happen were it heated in an ordinary cooking
272 pot. Another custom which by other stock-breeders has been explained as being based upon magic,
262 namely the usage not to drink milk and eat meat at the same time, is also rationally explained by the Tuareg. They say that there is no taboo on taking these kinds of food together, but it is very unwise to do so because the mixture will act as a laxative and upset the stomach. Therefore, if a Tuareg has drunk much milk he will not eat meat shortly afterwards, and if he has eaten meat he will not take
*233 milk for some hours, though he may do so should ample water have been added to the milk. The
234 Tuareg to my knowledge have no other special customs in connection with stock-breeding and milk
than there mentioned

*233 I have referred to the use of such signals above in connection with goat-breeding, and I have mentioned
192 that goats will respond to signals and also to names more willingly than other domestic animals with
the exception of dogs. Some of the signals used in Ayr and Ahaggar differ, and it is interesting that
[492] the Tuareg of these regions use different sounds to accelerate the speed of riding camels. The riders in
[171] Ahaggar use the same signal as the Arabs – a gutturally pronounced *ha* – while the Ayr Tuareg use a
rolling sound *ur*. The signal used by the *Kel Tahabanat* of the *Western Iwllemmeden* is *ut*.

411

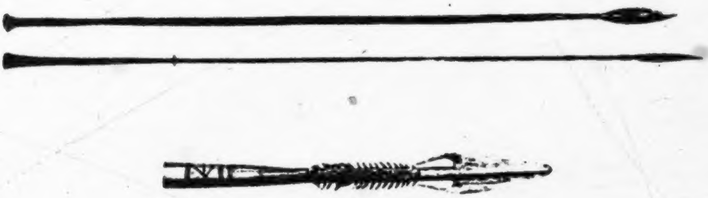

Fig. 112a–c. Tuareg spears.

a. Spear of the *taṛda* type used for hunting. Ahaggar, Olufsen's collection. Dimension: 1.80 m (N.M. G. 1.156).
b. Iron spear of the *allaṛ* type which is mainly a war weapon. Ahaggar, Collected by Olufsen. Dimension 1.82 m (N.M. G. 1.155).
c. Iron point of the barbed Tebu lance (*taṛda*) occasionally used by the Ayr Tuareg. Dimension: 0.265 m (N.M. G. 6619).

224 they are eagerly pursued by many rifle-owning nomads. Lhote estimates that in the year 1939 the Ahaggar Tuareg killed 300 barbary sheep by means of their traditional hunting methods, while in the winter season 1949–50 more than 200 animals were killed with rifles in the central parts of Ahaggar [432] (Lhote 1955a, p. 284). In 1954 the meat of one barbary sheep was sold for 4000 French francs, the [648] hide for 2000 francs. Though hunting of these animals is officially prohibited by the French, it *is* tacitly permitted and meat is frequently sold at the market place of Tamanṛaset.

The traditional methods used mainly in hunting gazelle and barbary sheep are as follows:—

[411] [567] [565] (1) The spear (*taṛda;* Fig. 112a) is nowadays used mainly by slaves, who never possess rifles. Before rifles became common it was the typical hunting weapon of all vassal Tuareg. Hunting with the spear takes place during the hottest time of the day, when the animals hide under rocks and trees to seek protection from the burning sun and the flies. It is then possible to creep very close to the game, and even the otherwise very shy barbary sheep can be taken in this way. When the hunter is close to the hiding place of a barbary sheep he claps his hand, and the animal rises, bewildered, and is then speared. In the past many barbary sheep were killed in this way, and it is said that a skilled and lucky hunter may even secure four or five animals in one day.

[171] (2) The use of stalking animals. Hunting by this method is used by some African stock-breeders (cf. Lagercrantz 1950, p. 97 ff.). There is a detailed description of the use of camels trained for this purpose among the Arabs of the Northern Sahara (Harding King 1903, p. 171 ff.). As far as I know the Ahaggar Tuareg do not train their camels for stalking, but on journeys they frequently hide behind their animals to approach and kill gazelle. In this case the hunting weapon is normally a rifle. But the method is perhaps an ancient one and used also for other hunting weapons in the past, as game animals do not fear domestic animals among which they frequently graze in the desert. In fact, [172] the ancient use of stalking animals in Northern Africa is clearly substantiated by a rock engraving at

411 p. 447; Bissuel 1888, p. 94 f.; Harding King 1903, p. 272, photograph opposite title-page; Rodd 1926a,
p. 235; Lhote 1955a, p. 375).

In Ayr I collected evidence of the fact that the sling known as *éfezemfes* was very common in
former days. It was made from plaited dum palm leaves, but the Tuareg claim that it was not a
hunting weapon, as it could not be used with precision. For the same reason, it is said, the sling could
not be used for herding domestic animals – there would be a great risk of wounding them. It seems as
[524] though the sling among the Ayr Tuareg was used mainly as a toy. It has apparently disappeared, and
a Tuareg of the religious *Ineslemen* class told me that the sling was a bad thing to use, because of a
story in the Ḳoran of a sling that was once used to throw a man into the fire. I do not know whether
the sling is, or was, used among the Northern Tuareg, but think it very likely. The sling has an extremely
[171] wide distribution in Africa, and it has been recorded from various northern Berber tribes and from
the Fezzan (cf. Lagercrantz 1950, p. 214 ff.).

The Tuareg of Ahaggar and Ayr, like pastoral Arabs of Algeria, frequently carry a short, heavy
stick (*aburi*). A stick of this kind is sometimes used as a throwing stick, or throwing club, by Tuareg
and Arabs, but cannot be characterized as a proper throwing stick. It is only occasionally used
as a hunting implement thrown against birds and small animals and serve many different purposes.
I believe that most Tuareg carry such heavy sticks as a weapon for personal protection and for killing
[114] poisonous snakes. In literature it is stated that true throwing clubs or throwing sticks occur among
the Tuareg (cf. Lindblom 1925, I, p. 117, 137 f.), but they seem to be unknown both in Ahaggar and
in Ayr. A large wooden club, collected at Timbuktu by O. Hagerup and now in the National Museum
(Copenhagen), is rather to be considered a weapon than a hunting implement (cf. Fig. 120b). The
throwing knife that is sometimes stated to be a Tuareg weapon is not traditionally used by these
[172] people. A rare throwing knife may be introduced into Ayr from the Teda together with spears and
knives of Teda type (cf. Lagercrantz 1950, p. 202 f.).

224 Hunting may have been important to many Tuareg in the past when game was more abundant. To-
[184] day true hunters are found mainly in tribes living in isolated and mountainous regions, notably
among the *Kel Tamgak* or *Imedderaren* (Ayr), and among the *Dag Ṛali* (Ahaggar). It is very interesting
[311] that proper hunting territories are found within the territory of the *Dag Ṛali* tribe, and it is significant
that it is strictly forbidden to graze domestic animals withing two hunting territories where barbary
224 sheep are also protected for a period of three months every year (cf. p. 148). It is also interesting
825 that the Tuareg have certain age-terms which are used exclusively for game animals. Thus the Ahaggar
Tuareg have three age-terms for gazelle:—

Age	Male	Female
Kid from its birth to the appearance of its horns . .	*awhim*	*tawhimt*
Animal not yet fully grown having small horns . . .	*ahyar*	*tahyart*
Fully grown animal	*ahenkoḍ*	*tahenkoṭ*

224 Certain superstitious usages and beliefs are connected with hunting among the Tuareg:—

754 (1) When a gazelle is killed its black tail-tuft is immediately cut off and placed in one of the animal's
777 nostrils (Fig. 122). This is common practise among all Tuareg and also among Arabs of the Sahara.

abelleṅgaḍ (*Reseda villosa*). Tr., L.M., U.M. Seeds of this plant are edible, but of bad taste – 222
according to Foucauld 1951–52, I, p. 65. 262

abseṛ (*Acacia Raddiana*). Tr., (L.M.). Fruits are collected mainly for goat fodder, but are eaten by 252
human beings when vegetable food is scarce. The fruit is then crushed into flour. The resin of this acacia is also edible.

tamat (*Acacia seyal*). Tr. The resin (*taynwst*) is edible. I believe it is used mainly as a remedy against [757]
stomachache. This is perhaps also true of the resin of the *abseṛ*-acacia mentioned above.

ahtes (*Acacia albida*). Tr., L.M. "La gousse est même comestible pour l'homme" (Maire 1933, p. 120).

ténefé (*Tephrosia leptostachya*). Tr. "Les Touareg mélangent cette plante desséchée au thé vert" [272]
(Maire 1933, p. 125).

laġul (*Alhagi maurorum*). Unknown in Ahaggar, but found in Tasilé-n-Ajjer. "Les racines tuberisées sont mangées par les indigènes (Killian)" (Maire 1933, p. 131).

aloṛa (*Peganum Harmala*). Tr., L.M., U.M. An annual seed-plant. Seeds are used for *tébik*.

taburaḳ (*Balanites aegyptiaca*). Tr., L.M. A tree having edible fruits which are macerated in water to remove the bitter taste.

tedjoq (spelling according to Maire 1933, p. 241) (*Pistacia atlantica*). L.M. Very rare according to
Maire (1933, p. 148). According to my own observations the fruit of this tree is eaten by Arab [171]
pastoralists (e.g., *Ulad Nail*) of the so-called *daya* region south of the Sahara Atlas. It is possible that it is also eaten by the Tuareg.

tahunek (*Rhux oxyacantha*). Tr., L.M. A tree having edible fruit.

téhaḳ (*Salvadora persica*). Tr. A tree with edible fruit.

tabakat (*Ziziphus lotus* var. *Saharae*). Tr. The berries are crushed and mixed with millet flour.

ȧẓawa (*Tamarix gallica*). Tr., L.M. "La manne produits par ces arbres est receuillié par les indigènes qui l'emploient comme matière sucrante. (Voinot)" (Maire 1933, p. 156).

tabarekkat (*Tamarix aphylla*). Tr. "Les rameaux mannifères sont employés pour sucrer l'eau" (Maire [263]
1933, p. 159).

tafeltast (*Myrtus Nivellii*). (Tr.), L.M. "Les rameaux de ce Myrte sont récoltés par les Touareg, [439]
desséchés et exportés par sac entiers au Soudan et au Mzab, avec l'*Artemisia judaica* ssp. *sahariensis*. [752]
Ces deux plantes sont utilisées comme médicaments et comme condiments" (Maire 1933, p. 162). [263]

awkal (*Cynomorium coccineum*). Tr., L.M. A plant yielding edible roots which are dried and ground into flour (cf. Maire 1933, p. 163).

aséyar (*Anethum graveolens*). (Tr.), L.M., U.M. An annual plant. Its seeds are used as a spice and [272]
for adding to tea.

takmezzut (*Teucrium Polium*). Tr., L.M. An annual plant used for adding to tea.

élel (*Nerium Oleander*). Tr., L.M. This plant is extremely venomous particularly so for camels,
which die from eating its leaves. "La cendre de bois de *Nerium* est employée par les femmes du Tidikelt [261]
pour se faire engraisser. A cet effet elles mélangent un peu de cette cendre avec des dattes pilées et du beurre, puis absorbent ce mélange dans du leben" (Maire 1933, p. 170).

aṛellachchem (*Solenostemma oleifoleum*). Tr. A perennial plant. Its leaves are used as a substitute [272]
for tea.

12

Agriculture

In the present chapter are described the agricultural techniques as I know them from Ahaggar (Tasilé-n-Ajjer) and from Ayr, and the economic role of agriculture to the subsistence of pastoral Tuareg is discussed. 241

CULTIVATION WITHOUT ARTIFICIAL IRRIGATION

In the Sahara farming is almost exclusively based on artificial irrigation, and agriculture and stock-breeding are largely separated industries. Large-scale stock-breeding necessitates migrations, while irrigation agriculture must be practised by people who live on the same spot almost continuously. But nomadic stock-breeding and shifting cultivation are occupations which go well together at the borderland of steppe and desert in the north where nomads or semi-nomads sow wheat and barley. Lyon says that the bedouins of Tripolitania use a rude plough but more generally a hoe (Lyon 1821, p. 44). However, plough cultivation seems to predominate among the northern nomads nowadays. Shifting plough cultivation is an important subsidiary occupation for most northern nomads in an almost unbroken area between the Atlantic and the Nile or the Red Sea, but it does not penetrate very far into the true desert country. In Algeria I have not seen shifting cultivation practised further south than the oasis of Ghardaya, where nomads under favourable conditions of rainfall sow wheat and barley by means of a simple plough made of a forked piece of wood (Nicolaisen 1950, Fig. 9, p. 70; Capot-Rey & Marçais 1953, pl. II,5 p. 47, Fig. 6 p. 54). West of Ghardaya the plough is known as far south as Tinduf and Beni Abbes, while it is known at Brak of Central Libya towards the east (cf. Capot-Rey & Marçais 1953, map p. 40). Feilberg in one of his early works stated that the plough in Northern Africa is particularly attached to shifting cultivation as a sowing implement (Feilberg 1931, p. 199 ff.). This is in agrement with my own investigations in the Northern Sahara, and it is confirmed by the very remarkable study of Capot-Rey & Marçais, who state that the plough is not fitted irrigation agriculture of the Sahara because of the many fruit trees, notably date palm trees, and because of the whole complicated irrigation system (Capot-Rey & Marçais 1953, p. 51; Feilberg 1931, p. 199). But there seems also to be another reason why the plough is found only in the Northern Sahara: It is particularly fitted for the sowing of wheat and barley, but less suitable for the sowing of millet and sorghum which are the most important cereals grown in the south (cf. Capot-Rey & Marçais 1953, p. 51; Feilberg 1931, p. 201). Barth records that he saw a kind of plough at Awderas in Ayr. It was drawn by three slaves who were driven like oxen by their master (Barth 1857, I, p. 424).

433 241 171 [867]

[p. 183]

241 I, p. 424). Rodd thinks the implement seen by Barth was clearly an importation from the north (Rodd 171 1926a, p. 133), and Feilberg assumes that if the plough was once known in this southern area it might perhaps have disappeared together with shifting cultivation (Feilberg 1931, p. 200). All this may be so, for there has been much contact between Ayr and the regions of Fezzan and Tripolitania in the past. But Barth does not say that he saw a plough but "a kind of plough", which may perhaps point to a type of large hoe drawn by men like that described from Senegambia by Feilberg (cf. Feilberg 1931, p. 169 f.).

243 The plough is unknown in the extensive area inhabited by pastoral Tuareg but this is not so with a kind of shifting cultivation. Pastoral Tuareg of Tasilé-n-Ajjer sow wheat and barley along the river valleys when these have been heavily flooded. Sowing is then done in a very simple way:— Holes are dug into the sandy soil, usually merely with the hand, and a few seeds are put into these holes. Wheat and barley thus sown grow in tufts with a space of 0.30 to 0.50 metres between each, and there seem to be about fifty straws in a normal tuft – the largest tuft I have seen contained about 130 straws (cf. Figs. 128–129). The plots cultivated in this way are generally very small, and the scattered wild plants growing in the plot are not always removed before sowing. The corn plots are left completely to themselves until harvesting, which is done with a sickle (Fig. 143). Primitive corn growing of this type cannot be practised continuously from one year to another in Tasilé-n-Ajjer, and the Tuareg of that region say that a household never grows enough corn in this way to meet its annual needs. [178] The primitive method of corn growing without artificial irrigation is unknown in Ahaggar nowadays, but it seems as if it was known in the past (cf. Duveyrier 1864, p. 372), and the Ahaggar Tuareg have a particular term (*tawgest*) for a field cultivated without artificial irrigation (cf. Foucauld 1951–52, III, p. 1466).

Rodd states that rain-grown crops could be raised most years in certain parts of Ayr and that in earlier days a fair amount of cereals seems to have been produced in this way in Ayr (Rodd 1926a, p. 133). There is little doubt that this statement is correct, and I think that even in parts of Ahaggar millet could be raised without irrigation in most years, for millet has a very short period of growth. [221] In Ahaggar (at Abalessa) it is sown in June-July and is harvested in September. Though millet plots are irrigated they are never watered much, and never to the same extent as wheat and barley which are grown in winter. In regard to Ayr, millet in southern villages of the Massif very frequently ripens in two months, and late in summer, at the end of the rains (*akasa*) or in the early dry season (*gharat*). [252] I have frequently seen well-developed small plots of millet and sorghum around deserted Tuareg camps where a great many seeds are always lost on the ground during the pounding and winnowing of millet for porridge. These self-grown plots, however, are not utilized by the Tuareg as the comparatively [131] small yield is quickly eaten by the numerous millet-eating birds. Owing to these birds it would be difficult for pastoral Tuareg to grow cereals in flooded valleys like the Tuareg of Tasilé-n-Ajjer, and it is partly for this very reason that the sedentary agriculturists of Ayr grow very little millet. Millet could easily be raised without artificial irrigation during the rains, and, in fact, millet was grown by shifting cultivation not far from Agadez as recently as up to the French occupation of Ayr.

245 In addition to the species of grain mentioned above there is one very important plant which can be grown without artificial irrigation, namely the date palm. In Tasilé-n-Ajjer there are river valleys

In literature there seems to be no reliable information about the existence of irrigation agriculture 241
in Ahaggar until Duveyrier, who states that agriculture did not obtain a fixed position in the economic 175
life of the Ahaggar Tuareg until the reign of the *Amenukal Elkhaj Akhmed* (1830–1877) (cf. Duveyrier
1864, p. 369). This statement is confirmed by most agriculturists and pastoral Tuareg in Ahaggar, 241
who claim that prior to *Elkhaj Akhmed* irrigation agriculture was not practised in Ahaggar. During 312
the reign of this *Amenukal* irrigation agriculture by means of the subterranean aqueducts known to 173
the Arabs as *foggara* (*éfeli*, pl. *ifelan*) was introduced by *Ahl Azzi* Arabs and negroid *Ḥarratin* from 177
the Tidikelt oases. Some people of Ahaggar claim that another irrigation system was introduced about
the same time, namely irrigation wells from which water is drawn by oxen and donkeys. This system,
known as *tanut*, is said to have been introduced by agriculturists from Ġanet (Djanet) (the *Kel Ġanet*).
It should be noted that there are certain traditions which claim irrigation agriculture to be older in
Ahaggar. One tradition says that it was practised at Silet-Tibeghin by Arabs who immigrated from
Tawat to cultivate by means of the *foggara* system even during the reign of the *Imenan* (Lhote 1955,
p. 286 f.). Another tradition, recorded by Foucauld, states that irrigation farming was known at a 241
very remote date by the *Isebeten* – a pagan people said to be the ancestors of the oldest vassal tribes of 312
Ahaggar (cf. Foucauld 1951–52, II, p. 535 f.). Traditions of the age of irrigation agriculture in Ahaggar 173
are conflicting. If it was practised long before the reign of *Elkhaj Akhmed* by the ancient vassals, I
believe that water was raised by human power, namely by the pole and bucket provided with a counter-
weight. For this system, which is known as *aṛudid*, is said to have been very common in the past. It
is extremely rare nowadys, and I have only seen it once at Terhenanet. There can be no doubt that [171]
this simple irrigation method is a very old one in North Africa, where it is more widely distributed
than all other types of irrigation methods (cf. Capot-Rey 1953a, map VII p. 320). The very wide
distribution of this system elsewhere in the Old World points to its great age, and it is perhaps to be
considered the oldest true irrigation machine.

A few Tuareg in the northern groups practise irrigation agriculture, which does not seem to be one 241
of their traditional occupations. Tuareg irrigation farmers are found mainly in the Fezzan, but mention 178
should also be made of the people of three noble tribes, namely the *Ilemtéyen* (living at Ṛat), the
Ikadeyen (at Tit in Ahaggar), and the *Kel-ahem-mellen* (roaming pastoralists north of Ahaggar or settled
farmers at the oasis of Inṛer in Tidikelt). These sedentary or semi-sedentary noble Tuareg were originally
true pastoralists, though but little is known of the original mode of livelihood of the *Ikadeyen*. A few
individuals or families among the Ahaggar vassals have more recently taken up irrigation agriculture
in addition to stock-breeding. There seems to be a growing tendency towards semi-nomadism in
Ahaggar nowadays. There may be several reasons for this. Thus one can point to the decline of [432]
caravan trading and to the fact that pastoral Tuareg cannot so easily get the true agriculturists to cul-
tivate for them. The true agriculturists of Ahaggar comprise the *Ḥarratin* (*Izeggaṛen*) of Tidikelt, [564]
who have mixed with the manumitted slaves now also known as *Ḥarratin* (*Izeggaṛen*), a few fair-
skinned *Ahl Azzi* Arabs, and the *Kel Ġanet* who are predominantly black-skinned. All these agricultural
people tend to mix with each other and also with tribes of pastoral Tuareg.

There are at present about 25 agricultural settlements in the river valleys of Ahaggar. Apart from 361
the administration centre of Tamanṛaset (1600) and the oasis of Abalessa (547) these agricultural 162

243 [262] Wheat and barley grown in winter constitute the most important crops in Ahaggar, but, as mentioned, the gardens are also cultivated at other seasons, and crops of millet and sorghum taken in summer are most important substistence for irrigation farmers in Ahaggar. Millet is known to the Tuareg as
● [171] *énélé*; it seems to be the same species as that so widely grown by African agriculturists of the savannah
[221] countries (*Pennisetum typhoideum*, or *P. Americanum*). Millet is sown in June-July and harvested in September, or in October. Little work is involved with the cultivation of this plant which is never watered
[461] much (cf. p. 184), and the agriculturists do not carry fresh soil to the millet plots as they do to plots of wheat and barley. Species of sorghum are less important than millet. The common species is known as
[386] *abora* or *tafsut* (*Andropogon Sorghum*). Another species is known as *tallak*; it has smaller seeds than the species just mentioned, and is grown mainly because of its stems, which are reduced to powder to be used for dyeing skins red (cf. p. 282).

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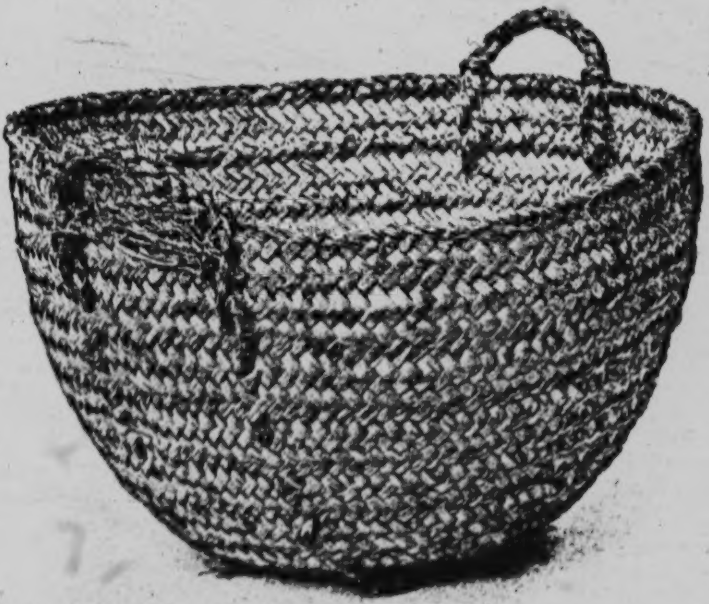

Fig 135. Basket (*tésesit*) of the type used for transportation of fresh soil to old garden land. It is plaited from straps of date palm leaves (*afaw*) and has handles of rope made from date palm bast (*esen*). Soil is also carried to gardens in larger baskets (*téferirt*, pl. *tifrar*) loaded on donkeys. Ahaggar, Abalessa. Dimension: 0.22 m high, 0.35 m in diameter at the rim. (N.M. G. 5285).

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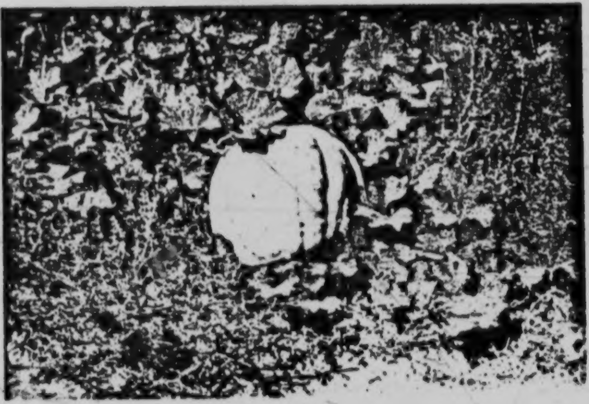

Fig. 141. The large gourd known as *kabaya* (*Cucurbita maxima*) growing close to the thorny fence (*aferağ*) which term is also generally used to designate a garden. Ahaggar, *Ahl Azzi* Arabs.

466 675 423 241 171 578 Tuareg garden owners have other obligations besides those listed under these three items, but these obligations vary with the systems of contract of which there are three. One system is known as *khamast* according to which the agriculturists gets only one fifth of the crops. This system is widely found in North Africa but has disappeared in Ahaggar some years ago. It is said that it was abolished by the *Amenukal* because it very frequently gave rise to disputes between Tuareg garden owners and their cultivators. It is now replaced by two other systems, the *tilt* system allowing one third of the crops to the cultivator, and the *aril* system according to which crops are divided equally between the owner and the cultivator. This last system is that almost exclusively used in Ahaggar nowadays.

To revert to Tuareg obligations towards their cultivators, these obligations, in addition to those mentioned above, are as follows:—

(4) To hand over an amount of seed-corn (*séfest*) of wheat and barley according to the size of the garden plot and the system of contract. With a *khamast* agreement the Tuareg garden owner gives all seed-corn. With a *tilt* agreement half of the seed-corn is supplied by the owner, the other half by the cultivator who is then also allowed to cultivate a private garden. With an *aril* agreement half of the seed-corn is given by the garden owner, the other half by the cultivator who does not possess a private garden unless he is headman of a *foggara* (p. 196).

(5) To give an amount of food to the agriculturist during the cultivation period of six months. This payment is known as *tenafok*, and is fixed at 75 kilos of millet, barley, or dates when cultivation is done according to the *aril* system, while 150 kilos are given for cultivation according to agreements of the two systems *tilt* and *khamast*.

434 The net profit to an agriculturist who cultivates for a Tuareg garden owner is lower than that gained by an agriculturist cultivating exclusively for his own private use. This will be seen more clearly from the calculations below where a garden with an annual yield of 700 kilos wheat and barley is considered:—

466
475 obtain a larger amount of vegetable food products and more wheat and barley. The pastoral Tuareg
423 gain less from their gardens than they did when the *khamast* system prevailed, but it is still profitable
241 for them to be garden owners.

434 The quantity of agricultural products anually consumed per person among the *Kel Ahaggar* is
511 estimated by Lhote at 187 kilos millet, 15 kilos dates, and a small amount of wheat for which no
262 figure is given. For Arabs of the Sahara the quantity of vegetable food is estimated at 180 kilos wheat,
[171] and 75 kilos dates anually per person (Lhote 1955a, p. 263). I add to this that wheat is used for bread
to a very large extent by the Ahaggar Tuareg, who also make much use of barley for bread and porridge.
According to Malaurie the amount of agricultural food products available per person among the
Ahaggar Tuareg is about 400 grammes a day, or 146 kilos anually (Malaurie 1953, p. 342). It should
be noted again that the amount of agricultural food products necessary for a Tuareg household varies
greatly from one year to the other. In years of drought when agricultural products form so to speak
the only source of food for the nomads, they estimate that a household consisting of husband, wife,
and one child will consume about two kilos of cereals (dates) every day, or 730 kilos in a year.
Consequently the amount of cereals and dates consumed anually per person may in dry years rise to
about 245 kilos. This seems to correspond to the amount of food considered necessary for Arabs of
[171] Tidikelt and Tawat, who live almost exclusively on cereals and dates. When employed as labourers by
the French Administration these sedentary Arabs are given 16 kilos of wheat and 4 kilos of rice a month,
or 240 kilos of agricultural products anually per person (Information obtained from the administration
511 office of In Salah in 1954). The agricultural products obtained by a pastoral household from a single
garden will not meet the needs of the household and its slaves even in years of good grazing, and less
433 so in dry years when pastoralists subsist entirely on agricultural food products. I give an example:
During the year 1954–55 which was extremely dry, a Tuareg who owned three gardens cultivated with
an *aril* agreement could not feed his household and his slaves (comprising two men, two women, and
three children from five to twelve years old) by means of his own garden products. The Ahaggar
[437] Tuareg depend on caravan trading for their provisions of agricultural food, and trading also helps them
to create the capital of millet and dates which is invested in their gardens in Ahaggar grown on their
behalf by agriculturists. I believe that most pastoral households of Ahaggar have gardens, but there
are Tuareg who have none. This is true, for instance, of most Tuareg living in and around the Ahnet
Massif. Tuareg of this region formerly had gardens irrigated by the *foggara* system at Abalessa, but
to-day they acquire their vegetable food products mainly by caravan trading.

IRRIGATION AGRICULTURE IN AYR

563 The largest aggregation of sedentary people in Ayr is found in Agadez (4.737), which is inhabited almost
[361] exclusively by negroid peoples who speak Hausa though most of them also know the Tuareg
[162] language (*tamachek*). This large sedentary population mainly lives on trade and on crafts of
[197] various kinds. The inhabitants are known to the Tuareg as the *Imeggedezen*. They are said to be related
[433] to the Sultan (or the *Amenukal*) of Agadez. There is a tradition which claims that the Sultan came
[173]

AGRICULTURAL IMPLEMENTS AND THE PRESERVATION OF CROPS

241 412 The hoe forms the basic agricultural implement in Ahaggar and in Ayr. The type of hoe used in Ahaggar is known as *ugelhim*, and it is akin to that in general use among irrigation farmers of the northern oases. It has a very large and heavy iron head provided with a ring for the shaft. I believe that this type of hoe is particularly fitted for irrigation work, but it does not seem to be in general use in Ayr. I have seen it at Iferwan in Northern Ayr where agriculturists have much contact with Tasilé-n-Ajjer, but I have not seen it further south in the Massif where it seems to be unknown. The common type of hoe in Ayr is different: it is named *tagumit* and is hafted by means of a tongue (Fig.
[171] 143d). The same type of hoe is widely distributed in Africa south of the Sahura, and it is perhaps to be considered the oldest type of iron hoe within the continent (cf. Feilberg 1934, p. 228–278).

241 The hoe is used for agricultural work in general, for digging irrigation canals, making garden beds, and for the preparation of the soil. The hoe is not used for sowing cereals. Sowing in Ayr is known as *anabal* and is performed in the following way:— As many seeds as can be kept between the first and second fingers are pressed a little into the soil, and water is led into the garden beds immediately after sowing. I have myself never watched sowing, but I was told in Ayr that it was frequently done
[778] by old women. I think that this is probably connected with the belief in the mystic power known as
[841] *elbaraka* so characteristic of all North African peoples. For cereals contain this mystic power, which can be spoiled by unclean women. It is considered harmful to the *elbaraka* blessing if cereals are
241 handled by menstruating women (cf. Westermarck 1926, I, p. 230). The hoe is used for weeding,
412 but the agriculturists of Ayr also have a special implement for this particular task. This is known as *elgechwad* and consists of a curved semi-circular iron blade hafted to a short wooden handle by means of a tongue (Fig. 143e). The semi-circular blade is sharpened at its outer and convex side which is pushed against the roots of weeds.

243 Various methods are used for the harvesting of crops. In Ahaggar and in Tasilé-n-Ajjer wheat and
[412] barley are always harvested by means of a sickle (*amreh*) (Fig. 143a–b). The sickle in Ayr is known as *elgechwad*, like the weeding implement mentioned above. It is not used for harvesting crops, but for the cutting of annual grasses to be stored for fodder (Fig. 143f). In Ayr both wheat and barley are
245 harvested by drawing the straws from the ground with the hands. In Ahaggar and Tasilé-n-Ajjer sickles are also used for harvesting dates, while the date-growing agriculturists of Ayr use another method. They do not cut the bunches, but proceed in the following way:— When dates begin to ripen they enclose every bunch in a plaited pouch to protect the fruit from the ravens and other birds. The dates are harvested one by one when they are ripe, while those not yet fully ripe are left to be harvested
243 later. Harvest is done in this manner about once a week until all dates have become ripe. Maize in Ayr is harvested by drawing the plant from the ground with the hand, and this work is normally facilitated by loosening the soil around the roots by means of the hoe. I do not know how maize is harvested in Ahaggar, where this plant is not so widely grown as in Ayr. Everywhere among agricultural people of Ahaggar and Ayr millet and sorghum are cut with a knife (Ahaggar, *elmusi*; Ayr, *ezegiz*) (Figs. 171–172)

175 added that wars were not confirmed to fighting between these large political groups, for there was
721 also fighting within these groups at intervals.

[648] The Ayr Tuareg had as their main enemies the Tebu, the Eastern *Iwllemmeden* and the Arab pastoralists of the Tawa district. In Ayr there were also sharp disputes between various drum-groups of
[578] the Ayr federation, notably between the *Kel Ferwan* and the *Kel Faday*. The *Kel Faday* Tuareg frequently joined forces with the *Kel Dennek* in fighting the *Kel Ferwan*.

[437] Throughout the 19th century there was a risk of severe trouble everywhere in the Sahara with adjacent regions, but caravan trading was most important to Tuareg subsistence at that period in spite of these latent conditions of hostility.

175 Great caravans then crossed the desert carrying gold, ivory, ostrich feathers, and slaves from the
437 Sudan to the Mediterranean, and south-bound caravans traded with salt and Arab and European goods. The Tuareg had their important part in these large trading expeditions, and they traded with their surplus of livestock and stock-breeding products much in the same way as they do nowadays. They acquired dates and millet from the sedentary farmers who were in constant need of meat, butter, cheese, and the like.

175 The organization of caravan trading among the Ahaggar Tuareg was different in the past. To-day
437 the normal trading units are tribal sections, and this was probably also true in pre-European times,
484 but these trading units did not travel independently as they do nowadays. Several tribes of the same drum-group travelled together under the leadership of a noble Tuareg of the dominant tribe of their chiefdom. When the Ahaggar Tuareg had no severe disputes with the *Ulad Ba Ḥammu* who dominated the Tidikelt oases, they traded with their population of sedentary farmers much as they do nowadays.
[439] They brought livestock, butter, dried meat, and Sudanese goods which were bartered for dates and Arab goods. The Ahaggar Tuareg also traded southwards, but they say that they did not go further south than Agadez, as it was considered dangerous to penetrate too far into the Sudan. They also
[438] say that they did not trade with salt until a few years before the arrival of the French, and that the important trading object before that time were donkeys, of which there was a shortage in Ayr. All
[317] this seems to agree with Duveyrier's statement that the salt deposits of Amadror were not utilized in his time owing to insecurity, though he says that the deposits situated on the caravan road from Wargla to Agadez had formerly been mined (Duveyrier 1864, p. 143 f.). As to the caravan trade of the Ayr Tuareg, I believe that it was very much as it is nowadays, comprising trading expeditions to
[361] the millet-growing Sudan and to the Bilma oasis. It is most possible that the Ayr Tuareg also then
[162] travelled in larger units to protect themselves and their goods, for the *Kel Ferwan* Tuareg say that in the past camps were always bigger than to-day, as a camp consisting only of three to five tents could not defend itself against raiders.

175 It is known that the slave trade was carried on until the arrival of Europeans and in certain parts
567 of the Sahara even later. Both the *Kel Ahaggar* and the *Kel Ayr* claim that they engaged in slave trading
[648] until it was abolished by the French authorities. However, it seems as if the Tuareg never engaged in
[171] this trade to the same extent as the Arabs. This is stated by Bissuel in regard to the Tuareg of Ahnet who bought their slaves from the market of Timbuktu. In general they kept these slaves for their own use, in contrast to the Arabs of Ṭidikelt who traded with slaves on a very large scale (Bissuel

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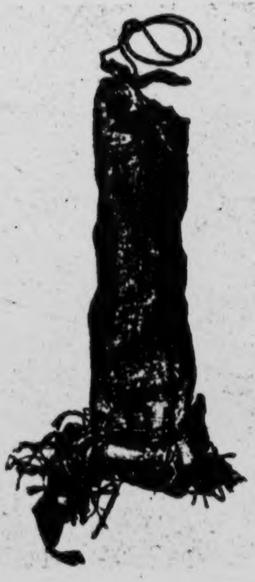

Fig. 155. Skin bag (*tasufra*) for the conservation of butter-milk on journeys. The bag is made from an entire goat-skin and has a handle of goat-hair cord tied to the skin patches of the hind legs. A leather handle is attached to the lower part of the bag which is ornamented with leather fringes, Ahaggar, the *Aguh-en-tehlé* tribe. Dimension: 0.77 m long without the fringes. (F.M. 89).

They[1] churn most butter from cow's
234 [262] milk, and this butter is not considered as delicious by the Ahaggar Tuareg as their own butter, churned mainly from goat's milk. – The use of wooden churning sticks by means of which milk is stirred in
234 an open container is unknown in Ahaggar and Ayr, so far as I know. Churning sticks are used in
412 other Tuareg groups. They are common among the Tuareg of Adrar-n-Foras (Musée d'Ethono-
184 graphie, Neuchâtel, no. 49.2.44 & Musée de l'homme, Paris, no. 38.16.48) and among the *Iwllemmeden*
● 171 Tuareg and the Fulani (Musée de l'homme, Paris, nos. 41.19.411 & 41.19.1326).

234 All Northern Tuareg, as well as the Northern Arab pastoralists and semi-nomadic Berbers and
[171] Arabs of the Atlas, make cheese from butter-milk, while this type of cheese is unknown among the
[184] Southern Tuareg and also among the Fulani. In Ahaggar butter-milk cheese (*awles*) is manufactured
[462] by women in the following manner:— Butter-milk is heated over the fire in an earthen pot (*téṛirt*, or *ufrun*)
*[415] (Figs. 186, 187a–b) by which process the milk is divided into two parts, namely pure water and a curdled mass of milk (*akru*). This mass of curdled milk is placed in a special basket (*aragus*) (Figs. 167a–b) hanging from a tree or a similar object to sort out the whey. Thus there remains a mass of cheese in the basket, and this mass is formed into small round pieces to be left for drying. Butter-milk cheese is manufactured in this way by all Northern Tuareg who are thus able to obtain butter and cheese from the same milk.

234 Another type of cheese is made from fresh milk and is manufactured not only by the Northern
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[1] [i.e. the Ayr Tuareg -- Analyst]

Tuareg but also by the southern groups and by Arab pastoralists of the Sahara; it is also known in 234
the Atlas, and is on the whole widely distributed in Northern Africa. This type of cheese is known to [171] ●
the Northern Tuareg as *takammart* and it is manufactured as follows:— Fresh milk is heated and [415]*
then poured into a large wooden bowl (e.g., *taɣelut*) (Figs. 195a–b). The milk is curdled into a mass of cheese by means of a rennet (*akammar*) consisting of the abomasum of kids that have never tasted anything but milk. The curdled mass of cheese is pressed with the hands and with a piece of straw- [285]
mat (*éseber*) in order that the liquids may separate. The mass of cheese is formed into small rectangular pieces of cheese which are left on the little straw-mat for about one day. They are then removed to [417]
be dried finally on a platform (*tahaġa*, *tafalkat*) made of branches.

Cheese made from fresh milk is known to the Ayr Tuareg as *tekemmart*; it is manufactured to very great extent and much in the same fashion as just described from Ahaggar. The abomasum of little [824]
kids or lambs to be used for rennet is named *tedeṛant*, and the Ayr Tuareg add parts of an annual plant known as *ekochmaren* (*Caralluma Mouretii*) in order that the milk may curdle quickly. The [285]
Ayr Tuareg also use little mats plaited from stems of the *afezu* grass (*Panicum turgidum*) to press and form the rectangular pieces of cheese; the Ayr Tuareg make mats (*tésebert*) (Fig. 168) particularly for this purpose, while the Ahaggar Tuareg generally use an old piece of a tent mat (*éseber*). In Ayr the rectangular pieces of cheese are dried on bunches of hay placed in trees (acacias), or on the top of the mat-covered tents.

The *takammart* or *tekemmart* type of cheese made from fresh milk is in high esteem as food among 262
all pastoralists of the Sahara. It is generally eaten when newly-made and soft, though it may also be 251
stored. The Ahaggar Tuareg make this type of cheese only when milk is plentiful, while the Ayr Tuareg 234
manufacture it most of the year though the main season of cheese-making is the season of *akasa*. 221

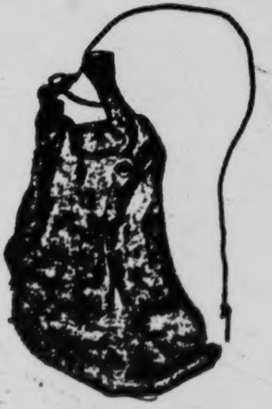

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Fig. 156. Skin bag of the *ámesseky* type used to sour milk before churning. Ahaggar, the *Aɣuh-en-tehle* tribe. Dimension: 0.37 m high. (F.M. 170).

up with small strips of fat. The pieces of liver covered with fat are put on a slender iron or 252
wooden rod to be roasted slightly over the fire. This dish is known to all Tuareg by the Arabic word [177]
elmefuf. It was introduced among the Northern Tuareg by the Arabs, but is not widely known among
the Ayr Tuareg.

This brief description of Tuareg meat preparation can adequately be supplemented by a reference 252
to two peculiar dishes:— (1) A dish known to the Ahaggar Tuareg as *talebeggat*. It consists of meat 262
which after boiling or roasting is pounded in a large mortar and frequently served with liquid butter.
This dish is also known to the Ayr Tuareg. (2) A dish which is described from Ahaggar by Foucauld 252
under the name *abangor*. It consists of untanned skin which is eaten in case of hunger after the following 261
preparation:— Untanned skin from household implements, shields, and the like is roasted under the
ashes, and is thereupon pounded into small pieces. These are eaten without any further preparation,
or after boiling. (Foucauld 1951–52, I, p. 73).

Like other North African peoples the Tuareg dry meat of domestic animals and of game. The people 251
of Ayr know three distinct drying methods, namely (1) *iwesan*, that is meat which is boiled until it
is free of blood; it is dried in the shade; (2) *tikelsin*, uncooked meat cut into pieces to be dried on a
string in the shade; (3) *kules*, uncooked meat cut into strips which are dried for some time to be
treated with salt and various spices. This last method is not practised among the Tuareg of Ayr, but by
sedentary people of Agadez and by Negroes further south in Damergu. The Ahaggar Tuareg generally
boil or roast the meat before drying; meat roasted in the ashes according to the *abatul* method and
thereupon dried is known as *takasa*. I do not know whether the Ahaggar Tuareg also practise the [825]
method of drying raw meat like the Ayr Tuareg, but the dried *agezzeram* lizzards which they take to
Tidikelt on trading expeditions, are dried uncooked. Furthermore, the method of drying raw meat [171]
is known elsewhere in the Northern Sahara, and I have myself seen it practised among the Berber-speaking
Chawiya of Aurès.

I conclude the description of Tuareg meat preparation with a brief note on the use of blood of living 272

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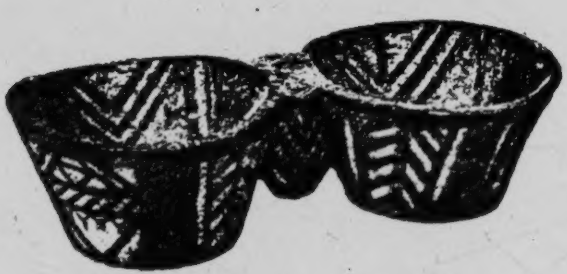

Fig. 166. Wooden double-vessel (*azar*) to contain water and butter for greasing the hair. Similar containers with a third vessel for fine-grained sand are also found among the Tuareg. Made by blacksmith from wood of the *taboraq* tree (*Balanites aegyptiaca*). Geometrical ornaments are produced by burning with a hot iron. Ahaggar, *Ahl Azzi* Arabs at Tamanrasset. Dimension: 0.241 m long. (N.M. G. 5880).

[text continues on p. 235]

camels. This blood never constitutes a proper dish to the Tuareg. They bleed camels to drink their 272 blood only when they lack water on journeys in the desert. Bleeding is done according to the method [277] described above, and the blood is collected in a drinking bowl. But the Ayr Tuareg say that they work up the mass of blood with the fingers with the result that the upper part of the amount of blood becomes more liquid, though it is always red in colour.

The Tuareg use the following implements to make cereals or other vegetable products into flour:— 4/2

(1) A large wooden mortar (*tindé*) with a heavy pestle (*éheren*) (Fig. 177). It is used in all camps 252 and villages of Ahaggar, Tasilé-n-Ajjer, and Ayr, and is in fact known all over Tuareg country. It is used mainly for pounding millet and sorghum, but it is also employed for pounding other cereals, including certain wild seeds, and for dates, cheese, meat, locusts, and the like. These large wooden [564] mortars are manufactured by the blacksmiths of Southern Tuareg country, including Ayr, where [238] most Northern Tuareg obtain their mortars. Among the Northern Tuareg there are also other mortar types. A small mortar which like the former rests on a foot and is known by the same name (*tindé*) (Fig. 178), is used mainly by sedentary agriculturists for pounding rock-salt, dried tomatoes, tobacco for chewing, and other plants or materials to be used in small quantities. Another type of mortar without a foot and known to the Northern Tuareg as *akabar*, or *takabart*, (Fig. 176) is found mainly among pastoralists who use it on journeys for pounding millet.

(2) A saddle quern (*tehunt*) (Fig. 179), which consists of two natural and in general unfashioned stones, is found in most camps of the Northern Tuareg. This constitutes the only grinding implement for wheat, barley, and certain wild seeds among the *Kel Ajjer*. The stones used for saddle querns are [324] sharpened at intervals with a hard stone or some other hard object (*tasettekut*) in order that they may grind effectively. A simple saddle quern (*asar*) is also known to the Ayr Tuareg, but it is less common there than in the north.

(3) The handmill (*tasirt*) (Fig. 181) is not a traditional implement of Tuareg culture. It is widely [171] known all over Northern Africa both by Berbers and Arabs, by sedentary peoples and nomads living in black tents. It has been introduced to Ahaggar mainly by the immigration of the Arabic speaking [167]
Harratin (Izeggaren) of Tidikelt,

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Fig. 169a–c. Pieces of butter-milk cheese (*awlis*, pl. *iwlisen*).

a. Ahaggar, *Ḥarratin* of Abalessa. Dimension: 0.066–0.068 m in diameter, 0.022 m thick. (N.M. G. 5816).

b. Ahaggar, the *Afuk-en-tehlé* tribe. Dimension: 0.062 × 0.022 m. (N.M. G. 5817b).

c. Ahaggar, the *Afuk-en-tehlé* tribe. Dimension: 0.058 × 0.016 m. (N.M. G. 5817c).

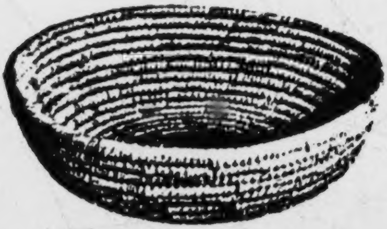

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Fig. 185. Tray or bowl (*tabeyka* - perhaps not correctly spelled). It is used for winnowing, and it serves as an eating bowl and a drinking bowl as this container is watertight. Coiled basketry of date palm leaves (*afum*). Made by Tuareg woman. Ahaggar, the *Dag Ɣali* tribe. Dimension: 0.205 m in diameter. (F.M. 263).

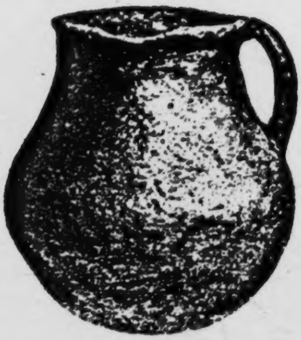

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Fig. 186. Pot (*talekkint*) with a single handle. Manufactured by *Ḥarratin* women in Ahaggar, the *Aguh-en-tehlé* tribe. Dimension: 0.18 m high. (F.M. 172).

in a mortar with a little water to a soft dough to which a little cheese, butter, or milk is added before 262
eating. If a large quantity of milk is added this dish is known as *tarkit*. The Ahaggar Tuareg, as men- 252
tioned (p. 167), also pound dried dates with locusts to make a dish eaten by women who wish to grow fat. 261

The Arabs and the Arabic-speaking agriculturists of Tidikelt (the *Ḥarratin*) have introduced among 262
the Northern Tuareg the well-known North African dish generally called kuskus. The dish is known 172
to the Tuareg as *keskesu* which is also Arabic by origin. But this dish is not the staple diet among 171 ●
the Northern Tuareg that it is among the Arabs and the Berbers of the Atlas. It is eaten mainly on
festive occasions, and there are many Tuareg women who even to-day do not know how to prepare it.
The *keskesu* dish is preferably made from wheat flour, though barley flour may also be used. The 252
cereals are ground with hand-mills or quern stones (saddle querns), and the flour is rolled into very

Crafts

Tuareg crafts clearly disclose traits belonging to distinct cultural levels. This may be seen from a 372 brief description of the methods of fire-making. [174]

Matches are in ordinary use nowadays, but they are used economically not only because they cost [439] money but also because many Tuareg live far away from towns or trading posts where matches can be obtained. The embers of a fire smoulder for a very long time, and when the Tuareg want to light a fire they normally find embers under the ashes where their fire has been. Glowing wood is carried from one tent to another on a fragment of calabashes or earthen pots, and some Tuareg even take fire with them in this way during nomadic migrations. If a new fire has to be lit and matches are not available, most Tuareg use the well-known method of fire-making by means of flint and steel. This [171] method is widely resorted to in Northern Africa even to-day, and is practised among the Tuareg of Ahaggar as follows:— The curved piece of steel (*enefed*) is placed over the three middle fingers of the right hand. It is struck against a small piece of flint (*tafarast*) held between the first and second fingers of the left hand together with a small piece of lighting material which may be a small piece of cotton cloth. However, the best lighting material (*tajjert*) is a piece of wood of *tefe̊ryast* (*Echinops Bovei*), [824] which has been boiled and thereupon beaten into a fibrous mass with a stone. The Tuareg keep this [415] lighting material in a particular leather bag (*tarallabt*) together with the steel and one or two pieces of flint (Fig. 198). Lighting material according to Maire is also made from a plant named *térahit* [824] (*Traganum nudatum*) (Maire 1933, p. 82). The spark produced by striking the steel against the flint causes the lighting material to glow, and after blowing on it or swinging it in the air, it is placed under a small bunch of hay which burst into flame after further heavy blowing. The use of flint and steel is not a very difficult method of fire-making, and I have used it myself on journeys when matches had come to an end.

The Tuareg do not generally use more primitive methods of fire-making nowadays. But they know [824] an ancient method of making fire by rubbing a piece of hard wood (*agar* in Ahaggar, *agar* in Ayr; *Maerua crassifolia*) against a piece of soft wood (*turha* in Ahaggar, *turza* in Ayr; *Calotropis procera*). By this process they produce by hand rubbing a glowing dust which is brought into flame by means of lighting material and hay as described above. One of my informants among the Ayr Tuareg had produced fire according to this method. Lhote states that the method is at times used by the Tuareg of Ahaggar, where the hard ribs of date palm leaves are also used for starting a fire by rubbing (Lhote 1955a, p. 258).

Stone materials play a very little part in Tuareg crafts. Natural stones are used occasionally as 412 [324]

[p. 255]

A photograph illustrating a women making a bag from spun hair is reproduced by Lhote, who states 286
that bags of this nature are rarely manufactured nowadays and are made exclusively by a few noble 415*
women of the *Kel Ṛela* tribe (Lhote 1955a, p. 319 f., pl. XV p. 384). This statement does not agree 462
with information gathered by myself in Ahaggar, where I was told that bags were made from spun 565
hair by Tuareg women of other tribes and notably by women of the *Isekkemaren* class. 114

In Ayr spinning of cotton is performed mainly to obtain sewing thread, which is considered superior 283
to European thread for sewing cotton clothes. To my knowledge most pastoral women do not spin [932]
their own cotton thread but buy it at the market of Agadez. However I have noted the existence of
simple cotton bows in a *Kel Tédalé* camp in the northern part of the Ayr Massif. The occurrence of [281] ●
the simple cotton bow among the Ayr Tuareg should no doubt be viewed in connection with the use [242]
of this implement in the Western Sudan (cf. Lagercrantz 1950, p. 260 ff.) from where the cotton plant [872]
has also been introduced.

Coiled basket-work plays an important part with the Tuareg, particularly the Northern Tuareg 285
who are experts in this technique which is related to sewing. A very primitive type of coiled basketry

[824]

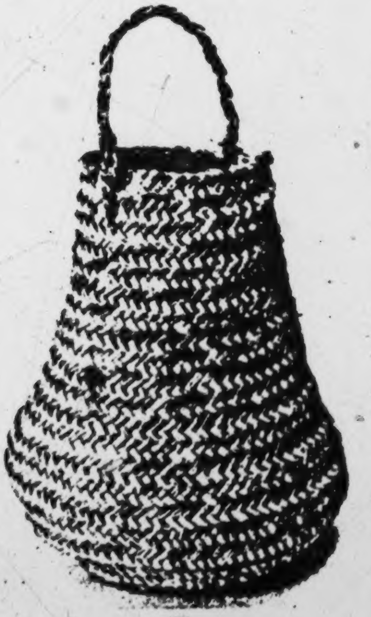

Fig. 211. Basket (*alegwegur*) plaited from date palm leaves (*afum*). The handle is of date palm bast (*asan*). Ahaggar, blacksmiths at Abalessa. Dimension: 0.38 m high. (N.M. G. 5835).

[text continues on p. 269]

may be seen in Fig. 167a–b illustrating baskets used for the manufacture of butter-milk cheese in 285
Ahaggar. True coiled basketry is sewn with a little awl (*tistent*) (Fig. 218a). 413

The technique of coiled basket work is used in the manufacture of a great many receptacles among the Tuareg of Ahaggar, and coiled basketry made and utilized by these Tuareg can be seen in Figs. 184, 185, 196a–c, 210a–b.

The Ayr Tuareg apparently do not make coiled basketry to a very great extent, but they 184
know a technique related to that used in Ahaggar, and also sew with a small awl (*éstan*). The 432
reason why so many Ayr pastoralists make very little coiled basketry work probably lies in the fact 366
that plates, bowls, and other receptacles of this type can be obtained at the market of Agadez at very low prices.

In the manufacture of plaited basketry the Ayr Tuareg are experts. They use the leaves of the dum 824
palm for plaiting a great many different articles such as tent-mats, containers, and the like. When 413
large mats and similar objects are made, the palm leaves are always plaited into narrow bands which
are sewn together with pieces of leaves by means of a large needle (*tasubla*) (Fig. 220b). Plaiting dum 462
palm leaves is one of the most important tasks of women among the *Kel Ayr*. Pastoral Tuareg of 184
Ahaggar in contrast to those of Ayr do not engage much in plaiting basketry, and I believe that most of them are unaware of this technique which is known to all sedentary agriculturists of Ahaggar. The plaiting material used by these people is date palm leaves (*agum*) from which they make mats, bags, and similar objects. Baskets (*alegutguten*) like that reproduced Fig. 211 are manufactured by sedentary agriculturists of Abalessa and are sometimes used by pastoral Tuareg. Another type of plaited basket
is that illustrated Fig. 135. It is made from palm leaves and has two handles made from palm bast 413
twisted into a rope which is sewn into the basket by means of the large needle (*tasugla*, or *tasubla*)
(Fig 220b). This basket type (*tésenit*) is widely found throughout Northern Africa among sedentary 171
people of the oases and in the Atlas. The sedentary agriculturists of Ahaggar use baskets of this kind 415
for many different purposes, and they play a part in agricultural work, e.g., to carry fresh soil to the gardens (p. 191) and to remove soil when digging and cleaning out foggara canals.

The Tuareg have a third technique which can adequately be mentioned in connection with plaiting, 824
namely the manufacturing of mats from the stems of the *afezu* grass (*Panicum turgidum*). These mats are made from straws placed parallel to each other and fixed together by means of strips of leather.
These mats are known as *éseber* or *tésebert* according to their use and size. They play an important 351
part in Ahaggar where they are used as a kind of windscreen surrounding all tents, and they are manu- 462
factured by many women among the *Kel Ahaggar* (Figs. 268, 269). Mats of this type are also made by some Ayr Tuareg for cheese manufacturing (Fig. 168), but Tuareg women of Ayr practise very little
this particular technique of mat making. Large mats made from *afezu* stems are used for bed covers, 352
and in rare cases also for windscreens or sunshades, but these mats, which are found in all Tuareg 563
camps together with the large wooden bed (*tédabut*) (Fig. 212a–b), are not manufactured in Ayr but 462
in the south, particularly by women of the *Igdalen* Tuareg. Mats manufactured by this method are 342
used for an interior cover of the barrel-vaulted mat-tent (Fig. 265d); these mats are also imported 438
from the south.

The Tuareg are expert at skin and leather work which constitues the most important craft in the 281

Dress

In this chapter on Tuareg dress I do neither describe all types of Tuareg garments nor dress ornamentation, but content myself with a brief description of the prominent articles of dress and of certain peculiar garments which are interesting and important for our understanding of the cultural position of the Tuareg. 29 128

In Northern Tuareg country pastoral women sometimes wear a large hat plaited from date palm leaves and known as *télé*, which literally means "shade" (cf. Fig. 231). However, hats of this kind, are never manufactured by pastoral Tuareg who obtain them from sedentary agriculturists. Hats of the same type are very common further north in Africa where they are worn not only by women but also by men, and I believe that hats of this sort were introduced to the Tuareg by the Arabs and the Arabic speaking *Ḥarratin*, who came to Ahaggar about a hundred years ago. In Ayr I have seen plaited hats worn by one or two black-skinned men of the *Kel Ewey* group. These hats are also used among the Hausa. True pastoral Tuareg like those of the *Kel Ferwan* group do not wear hats. 292 [285] [171] [172] [184]

It seems as if the hat is a foreign element in Tuareg culture, and that as traditional head garments the Tuareg have nothing beyond the veil and the headcloth described in some detail in the general chapter about the Tuareg (cf. p. 14 f.). We have seen that both the veil and the headcloth are sometimes referred to as *alechchu*, "a piece of Sudanese indigo cotton sewn together from narrow strips or bands", for the traditional veil and headcloth are made from this type of cotton which is highly esteemed for many other garments. It seems to be the oldest type of cotton used for dress among the Tuareg, while white cotton of an ordinary type has been introduced more recently among them. The Ayr Tuareg use the word *maser* for white cotton woven in one piece, and they say that this word refers to *Miṣr* (Egypt) wherefrom cotton of this particular type was first introduced. It came much later than indigo cotton of Sudanese type, which has been known in Ayr from very ancient times. 291 294

Indigo coloured cotton introduced from the Sudan is very expensive and is nowadays used mainly for festive occasions, while daily dress, including the veil, is made of European cotton, which is indigo or white in colour. There can be no doubt that the comparatively cheap European cotton has displaced the use of skin or leather for daily dress. For we know that skin shirts were extremely common in Ahaggar at the beginning of the present century (cf. Foucauld 1951-52, I, p. 112), and Duveyrier says that "le pardessus en peau" is held in esteem (Duveyrier 1864, p. 406). Before Duveyrier we have Lyon's statement that Tuareg of the Fezzan area use skin (leather) for dress:— "A leather kaftan is also much worn, of their own manufacture, as are leather shirts of the skins of antelopes, very neatly sewed, and well prepared". In addition Lyon depicts a Tuareg wearing a leather shirt with ample sleeves (Lyon 1821, p. 110). 291 [292] [178]

[p. 287]

292 seen them worn by a few Tuareg men in Ahaggar and Tasilé-n-Ajjer. The fact that they are worn by 177 women during their period of isolation after the husband's death, a custom introduced with Islam, also indicates that these boots are connected with Islamic culture and thus with the Arabs.

[129] The Arabs possess a great religious prestige with the Tuareg, and are responsible for the introduction of many articles of dress among them. Some Northern Tuareg have adopted the Arab *gandura* of kaftan cut as a substitute for their traditional poncho shirt, and many Tuareg nowadays wear the Arab type of headcloth instead of the traditional veil. The burnus (*abernuh*) is also worn by some [171] Northern Tuareg in winter. This garment is widely used by Berbers and Arabs further north in Northern Africa. It is not traditional to the Tuareg who may have adopted it from contact with the Arabs.

are also very akin to the Tuareg in culture, but have preserved some Arab traits of material culture 175 and their traditional social organization in addition to their language, though they also know *tamachek*. 648 We are here concerned only with traits adopted into Tuareg culture from contact with the Arabs.

In the description of Tuareg culture I have already pointed out many cultural traits due to Arab 177 influence. I have mentioned such traits in connection with food-preparation (p. 232, 237 ff, 247 ff) and dress (p. 303 f.). I have also mentioned the introduction of cultivation methods and cultivated plants owing to contact with Arabs and the Arabic-speaking *Ḥarratin* (p. 186 ff.), and I have stated that it seems as if new types or new breeds of domestic animals were introduced to North Africa by the invading Arabs. Cats and domestic pigeons seem to be post-Arabian in the Sahara (p. 115 f.), the true grey-hound came to Tuareg country with the Arabs, who also introduced the particular horse-breed known as the *Aryen* type (p. 113). Doutressoulle relates a native tradition to the effect that this breed came to the Begzen Mountains with Arabs of Tripolitania (Doutressoulle 1947, p. 238 f., 242). Horses of this breed are introduced to Ayr from the north even to-day, but as far as I know the Ayr [492] Tuareg and the Hausa-speaking *Imeggedezen* do not use the Arab type of saddle or the very broad stirrups typical of the northern horse-riding Arabs. They generally use very narrow stirrups for the insertion of one or two toes. These stirrups were possibly introduced to the Western Sudan with the Dongolawi breed. It came from Upper Egypt at the end for the 13th century A.D. when the *Djoheyna* Arabs immigrated (Mauny 1961, p. 283).

I have mentioned above (p. 54 ff.) that there are two main types of camels among the Northern 233 Tuareg:— (.) a northern Arab breed (*marroki*) characterized by heavy stature and a thick covering of wool, and (2) a southern breed more slenderly built and with little or no wool – a breed which is typical to the Tuareg. Medieval Arab authors have stated that the Tuareg possessed camels of a par- [175] ticular breed well fitted for riding (Ibn Khaldun II, p. 70, 105; Edrisi, p. 11, 67 f., 144 f.; Leo Africanus p. 940 f.). The division of camels into two distinct types of the above characteristics can be traced 233 elsewhere in Northern Africa, where the heavy woolly breed is found mainly in the north and partic- 171 ularly among Arabs, while the slender non-woolly breed is common among such pastoralists as the Tuareg, the Moors of Mauretania (who are largely of Tuareg stock and have a great many Berber words in their camel vocabulary, according to Monteil 1952), the Tebu, and the Beja tribes around the Nile (cf. Cauvet 1925, I, p. 79 ff.; Doutressoulle 1947, p. 272 ff.; Nachtigal 1879, I, p. 415 f.; Murray 1935, p. 92 ff.). The distinction between the two main types cannot apparently be explained by the different environmental conditions, for they frequently live within the same type of environment, and the northern *marroki* type is found particularly among Arabs, and not only among the Arabs of the northern desert. *Marroki*-like camels seem to exist among such Arab tribes as the *Kunta* and the *Berabich* north of the Niger Bend in the Azawad desert (Doutressoulle 1947, p. 273), among the camel-breeding Arabs of the Lake Tchad region, and among Arab pastoralists of the former Anglo-Egyptian Sudan – particularly among the Kababish (Cauvet 1925–26, I, p. 80 ff., 83 f.). There [174] seem to be little doubt that the *marroki* camel came to North Africa with the Arabs and it is then natural to investigate whether they also introduced particular cultural traits connected with camel-breeding. It is relatively easy to take up such an investigation with reference to particular saddle [127] types, because they are frequently described and depicted in literature.

492 The large saddles for women (*akhawi, tkhawit, aragen*) (p. 88 f.) were most probably introduced
[177] by Arab pastoralists. These saddles are not known among all Tuareg. In the Northern Tuareg groups
they are used in the noble class (*Ihaggaren*), in the *Iseḳḳemaren* class, which seems to have relationship
with Arabs (p. 10, 398 f.), and in the *Iregenaten* tribe which lives in Tamesna though it belongs to the group
of Ahaggar Tuareg. Its members claim to descend patrilineally from Arabs, matrineally from noble
Tuareg. Large women's saddles are also found among the Tuareg of Adṛaṛ-n-Foṛas, and there is a
saddle of the *akhawi* type from this group in the ethnographical collection of the Neuchâtel Museum
(no. 49.2.35). Women's saddles are also common among the *Iwllemmeden Kel Dennek*. They are
described by Nicolas who mentions two types. One named *tahdwit* is perhaps constructionally different
from the saddles of the north, while the other type termed *aruku* is constructionally related to riding
saddles in Ahaggar, but is without the large wooden side-arches characteristic of certain northern
saddles. However, saddles having arches like this are found among the *Deremchaka* Arabs who live
in *Kel Dennek* territory (Nicolas 1950a, p. 178 Fig. 47a & e, pl. X p. 177). Light women's saddles
resembling the Ahaggar *tkhawit* saddle without side-arches and known as *akhawi* was seen in the
camp of the noble *Kel Tahabanat* Tuareg near Ayoru. Here I was told that the wooden structure is
always manufactured by blacksmiths while its cover of ochre-coloured leather is made by Tuareg
women who also make the little *afezu* mat placed over the structure and serving for seat. Such saddles
[565] are found only in noble tribes of the *Western Iwllemmeden*, never among vassals. Women's saddles
are unknown in Ayr where the Tuareg build a riding saddle upon large cushions (cf. p. 90), and they
are apparently also unknown among the *Kel Geres*. The Ayr Tuareg speak of riding saddles known
as *akhawi* or *tkhawit* as "Arab saddles", and these terms are also derived from Arabic. Lhote states
that he has not seen the richly-decorated saddles known as *akhawi* outside of Ahaggar (Lhote 1947a,
p. 142). Thus it seems that proper women's saddles have a limited distribution among the Tuareg.
They occur mainly in certain classes of the Northern Tuareg, the *Kel Adṛaṛ*, and the *Iwllemmeden*.
492 In these areas they are apparently also used by Arabs. Somewhat related women's saddles are found
171 among the Tebu. These saddles are described by Le Coeur who states that they are normally bought
in Kanem (Le Coeur 1950, p. 60, 126). I think that this may perhaps indicate their origin as this region
and adjacent parts of the Lake Tchad plains have a population of pastoralists of Arab descent. Various
types of women's saddles occur among all Arab pastoralists of North Africa and the Arab peninsula
– possibly with the exception of certain bedouin tribes of South-eastern Arabia. I do not know whether
these saddles occur among the Beja, the Danakil, and the Somali. They are not mentioned in the
literature I have consulted.

492 The pack saddle known as *tebeyut* or *tkhawit* (p. 76, Fig. 57) is not very common among the Northern
Tuareg. It is unknown among the *Kel Ayr* and so far as I know also among the *Kel Geres*. It seems
to be unknown also among the *Iwllemmeden Kel Dennek* where the same structure is used as a women's
saddle as mentioned above (Nicolas 1950a, p. 178 Fig. 47e). I do not know if this saddle type occurs
492 in other Tuareg groups. It is found in the Lake Tchad region and Chudeau considers it typical of the
171 sahelian zone (Chudeau 1909, p. 206; Capot-Rey 1946, p. 163). It is also mentioned by Nachtigal
as the typical type of saddle of the Tebu (Nachtigal 1879, I, p. 457), while the Tebu saddle described
by Le Coeur and now preserved in the Musée de l'homme (no. 32.50.4) is slightly different from the

Bedouin MJ4

saddle depicted by Nachtigal the fore and the aft trees being connected by two horizontal or oblique sticks instead of two crossed sticks at each side (Le Coeur 1950, p. 175). This saddle type is also depicted from the Tebu by Moberg and Fuchs (Moberg 1953, p. 192; Fuchs 1961, p. 39), and I have myself seen a saddle like this among camel-owning Fulani at Niamey on the Niger. A related saddle type with fore and aft trees at each side connected with two horizontal sticks, is depicted by Heuglin from North-east Africa (Heuglin 1877, I, p. 26). It is perhaps the common saddle type in and around the Beja country. T 492 171

The saddle corresponding to the *tebeyut* or *tkhawit* type of the Northern Tuareg is known by the Arabic word *basur* among the Tebu (Nachtigal 1879, I, p. 457), while among the Arabs of North Africa the word *basur* is generally used for women's saddles of the same fundamental construction. Pack saddles of *tebeyut* or *tkhawit* type are known to the Arabs of Algeria as *ḥerej*. However, such saddles do not seem to be common among Arabs of Algeria, where I have never seen them, though they are probably used by Arabs of Upper Egypt and in Sinai (cf. Murray 1935, p. 116). B 492 171

In Arabia saddles constructionally resembling the *tebeyut* or *tkhawit* type are extremely common. They are used as pack-saddles and also for riding. There seem to be three distinct Arabic names for them:— (1) a sadle known as *sdad* (or *shadad*) and characterized by particularly high pommels; it is used mainly as a riding saddle (cf. Boucheman 1934, p. 35 ff., Fig. 9–11; Musil 1928b, p. 350 ff., Figs. 37, 44; Euting 1906, p. 394 ff., ill. p. 393, 397; Dickson 1949, p. 84 ff.) (2) a saddle known as *misame* constructionally of the same type, but having no high pommels; it is very much like the *tebeyut* or *tkhawit* type described from the Northern Tuareg (cf. Boucheman 1934, p. 61 f., Fig. 23; Musil 1928b, p. 354, Fig. 41; Dickson 1949, p. 84 ff.) (3) a saddle known as *rabit* of very much the same type as the *misame* saddle but of a somewhat heavier construction (cf. Musil 1928b, p. 354; Euting 1906, p. 398, ill. p. 394). The two last mentioned saddles are mainly pack-saddles but they are also used for riding. The distribution of the saddle types *sdad*, *misame* or *rabit* in Arabia seems to be as follows:—

The Syrian Desert; the tribes *Sba'a* and *Rawala* (cf. Boucheman 1934 & Musil 1928b quoted above).
Hedjas; *sdad* (Musil 1926, Figs. 30, 84, 85, etc.).
Negd; *sdad* (Musil 1928a, Figs. 8, 22, 28, 62, 63); *misame* or *rabit* (Musil 1928a, Fig. 15).
Irak; *sdad* (Musil 1927b, Figs. 1, 19, 33, etc.).
Kuweit; *misame* or *rabit* (Raunkiær 1913, Fig. 21; Dickson 1949 quoted above).
South Arabia; *sdad*; the tribes of *Murra*, *Sa'ar*, and *Harab*. Riding saddles of the *sdad* type are not found east of Dhufar (Thomas 1932, p. 268).

It would appear that a riding saddle of the *sdad* type is depicted in a 9th century B.C. relief at Tell Halaf (cf. Dostal 1958, p. 2, pl. I Fig. 2).

The common pack-saddle among the Northern Tuareg is the *élaki* (cf. p. 74 f., Fig. 55). This saddle type, as mentioned, is not made by the Tuareg themselves, but normally by sedentary *Ḥarratin* of Tidikelt where palm material is abundant, more rarely by blacksmiths who make the construction of wood, and not from the ribs of date palms. The *élaki* is the common saddle type all T 492

Tuareg where influence from Arab material culture is particular strong, and it is structurally identical 492
with the Arab pack-saddle known as *ḥawiyya* or *ḥedâğe*. The origin of the pack-saddle called *aruki* [177]
among the Southern Tuareg is not easily determined. It may perhaps constitute a late type which [171]
developed from a pack-saddle with two curved or angular trees in front of the camel's hump. This may be true of some *aruki*-like saddles. But certain pack-saddles of *aruki* type may perhaps have originated from a kind of split wood similar to that used for camels by the Somali of Tana River (cf. Ahlefeldt 1948, ill. p. 137).

There are other traits of camel breeding that have apparently been introduced among the Tuareg 233
through contact with the Arabs. This may be true of the looped rope (*asaṛun*) connected with a little 177
stick for attachment around the camel's foreleg (p. 72 ff., Fig. 45a). This device is unknown among the Ayr Tuareg though common among the Northern Tuareg who often make it of camel's wool. It seems to be known among most, perhaps all, Arabs, who manufacture it from the same material. [171]
Among the Ababde and the Bisharin it is plaited from dum palm material (cf. Sleesen-Dolk 1957, p. 12, Figs. 28–30). It is most probably an Arab trait which also seems to be Cauvet's opinion (Cauvet 1925–26, I, p. 554 & pl. LXII, p. 555).

We may perhaps also mention the large woven transportation bags which are extremely common 415
among all North African Arab pastoralists, while unknown among the Tuareg. But small plaited or 177
woven bags of goat hair mixed with camel's wool are manufactured in Ahaggar by women of certain [462]
tribes (p. 266 f, Fig. 209a–b) .These bags are known as *tiṛrar* (sing. *teṛerirt*) which seems to be derived from Arabic (cf. Foucauld 1951–52, IV, p. 1776 & Cauvet 1925–26, I, p. 711). The small loading sticks *tihḍaḍ* (sing. *téhedit*) (p. 76) used to unite the two halves of a camel load are perhaps also Arab in origin for this particular word is apparently also derived from Arabic (cf. Foucauld 1951–52, II, p. 520 & Cauvet 1925–26, I, p. 711).

The origin of other traits of camel-breeding is not so easy to determine, but it is very possible that 233
the plaited pouch which among the Northern Tuareg constitutes the normal method to prevent camel 177
calves from sucking (p. 62, Figs. 41–42) was also introduced by the Arabs. This device is unknown among the Ayr Tuareg and apparently also among the *Kel Geres*. It is found among the *Iwllemmeden Kel Ataram* (*abegu*) and is recorded in literature from the *Kel Dennek* (Nicolas 1950a, p. 141), and from the Moors (cf. Monteil 1952, p. 71). It is widely found among all pastoral Arabs of Northern [171]
Africa and of the Arabian Peninsula.

As to the use of camel brands produced by burning with a redhot iron it seems difficult to judge 233
from distributions the origin of this method. These brands are known among most Tuareg with the 422
exception of the *Kel Ferwan* and other Tuareg of Ayr, who use earmarks cut with a knife. Earmarks [171]
seem to be used for camels also among the Moors (cf. Monteil 1952, p. 103) and were apparently used in ancient Arabia (cf. Cauvet 1925–26, I, p. 298). One might perhaps assume that earmarks constitute an older type of proprietry marks, while brands came later. But information about marks and brands is scarce.

The origin of many traits of camel-breeding cannot be determined, but it is not be doubted that 233
the Arabs have introduced into North Africa a particular breed of camel together with certain saddles 177
and objects connected with the use of the camel as a pack animal. There is also no doubt that these

233 traits are found among the Northern Tuareg and partly among the *Iwllemmeden*, while they have
177 not generally been adopted by the *Kel Ayr* and the *Kel Geres*. It is most interesting in this connection that when they wish to speed up their riding camels the Northern Tuareg use a sound identical with that used among the Arabs, while the Tuareg of Ayr use a very different signal (p. 136).

The Arabs only partially influenced Tuareg camel-breeding, for this was well-established in North
233 Africa before the Arab invasions. There is no doubt that certain traits of camel-breeding are known
171 to most pastoralists who breed the one-humped camel. Such traits may well have been introduced to North Africa with the Arabs, but they were most probably also known to North Africa camel-breeders before the Arabs arrived. Among such traits universally known to camel-breeders, the following can be mentioned:—

Milking with the dummy-calf. This seems to be practised among all Arab pastoralists of the Peninsula; it is frequently described, in modern literature about this area, and is mentioned as well in ancient Arabic poetry (cf. Cauvet 1925–26, I, p. 355). The custom is known to Arabs of the Sahara and, according to Monteil, also to the Moors (cf. Monteil 1952, p. 72). I have mentioned above that the dummy-calf is used for milking camels among the Northern Tuareg and in Ayr, and according to Nicolas the custom is also practised among the *Iwllemmeden Kel Dennek* (Nicolas 1950a, p. 140).

Perhaps a milking method universally known is that of patting the udder. I have recorded this method from Ahaggar, from Ayr (p. 57), and from Arab pastoralists of the Sahara (e.g. the *Ulad Ba Ḥammu* and the *Chamba*). I have not been able to find much information about this method in literature, but it is possibly this to which Thesiger refers in his description of camel milking in Southern Arabia (cf. Thesiger 1959, p. 145).

A method of which there is also very little information is that of weaning calves by cutting them on the bridge of the nose in two or three places. I have noted it from the *Kel Ahaggar*, the *Kel Ajjer*, and the *Kel Ayr* and from pastoralists of Arab tribes such as the *Ulad Ba Ḥammu*, but have not seen it among Arabs in the borderlands of the Atlas and the Sahara. I have also noted the existence of this particular method among the *Kel Tahabanat* of the *Western Iwllemmeden*, but it is not mentioned by Nicolas from the *Iwllemmeden Kel Denek*, though he states that it is known among the *Kunta* (Nicolas 1950a, p. 141). In certain parts of North Africa a cut on the bridge of the nose of camel calves is given one or two thorns. These sting the mother camel when the calf tries to suck and the mother camel therefore kicks the calf away. The method is described from In Salah by Cauvet, while Nicolas mentions it from certain Arabs and *Iforas* Tuareg (Cauvet 1925–26, I, p. 359; Nicolas 1950a, p. 141). A related method is known to pastoralists of Arabia where a little pointed stick is tied to the head of the calf to prevent it from sucking (cf. Cauvet 1925–26, I, p. 359).

261 A very interesting custom, perhaps also a very ancient one, is that of using the blood of living camels
171 for food. Among the Tuareg, blood of living camels is drunk only when water is lacking during camel expeditions in the desert (cf. p. 235). The bleeding of camels to utilize their blood is also practiced among the Tebu (Huard & Charpin 1960, p. 195), and among the bedouins of Arabia it seems as though camel's blood is consumed regularly for food. Doughty describes how Arab bedouins boil camel's meat in broth and blood, as they are unaware that the Ḳoran forbids the use of blood for food (Doughty ed. 1926, I, p. 561). A good description of the use of blood of living camels as food among

261 171 Arab bedouins is given by Finbert:— "Dans les jours de disette, on pulvérise les ossements de la carcasse, et bien que l'Islam interdise l'usage du sang, on l'y mêle en le recueillant d'une veine que l'on ouvre à un chameau. De ce mélange on fait une pâtée que l'on dévore. En cas de famine prolongée, on mange de la corne moulue avec des trayons macérés dans du sang. Le sang lui-même, toujours pris sur l'animal vivant, est versé dans des boyaux qui sont ensuite grillés comme du boudin" (Finbert 1938, p. 39). It is very possible that the custom of bleeding live animals for food has once been widely known among many people of the area now dominated by Islam; thus Ibn Batutah mentions a Turanian people among whom blood of live horses is used for food (Ibn Batutah III, p. 24).

237 171 Among the Tuareg a certain medical value is attached to camel's urine (p. 127), but they do not wash in it as do many Arab bedouins of the Peninsula. A conception of camel's urine as something clean seems to exist among many camel-breeders, and Thesiger mentions that bedouins of Southern Arabia wash their hands in camel's urine before milking (Thesiger 1959, p. 145).

233 171 It is evident that some traits of camel-breeding resemble customs known also to African cattle-breeders, and it seems as if these customs are widely found among people who breed one-humped camels. – Certain traits of camel-breeding are peculiar to the Tuareg and a few adjacent peoples.

492 171 In contrast to all other camel breeding peoples the Tuareg and some adjacent peoples have riding saddles that they place in front of the camel's hump (p. 78 ff.). The common saddles are those known as *térik*, comprising the two main types named *tamzak* and *tekokeyt*, the most developed riding saddles among the Tuareg. These saddles are also used by some of the Northern Arabs, notably the *Ulad Ba Ḥammu* and the *Chamba* who import them from Southern Tuareg country – particularly from Agadez where the best saddles are made. The *térik* saddles with a cruciformed pommel are quite peculiar to the Tuareg.

The Tuareg saddle known as *ahyas* or *tahyast* (Fig. 63) resembles the *térik* type in that it is also placed in front of the camel's hump, so that camels are ridden in exactly the same manner as with *térik*-saddles. The *ahyas* type is not mentioned from the *Kel Dennek* Tuareg. But it is extremely common among the *Western Iwllemmeden* and is said to have originated in Aḍraṛ-n-Foṛas. Further west among the Moors, a riding saddle somewhat resembling the *ahyas* type seems to form the common type. It differs from the *ahyas* mainly in that it has a very low pommel and a very broad and deep seat. Several specimens of this Moorish saddle type are found in the Musée de l'homme in Paris (e.g., nos. D. 33.24.14 & 34.76.15). These Moorish saddles are placed in front of the hump like all Tuareg riding saddles, but I have been told that owing to their peculiar structure the riders cannot generally reach the camel's neck with their feet, so that they ride more bumpily and less steadily than the Tuareg, who secure their position by stemming their naked feet against the camel's neck. This is also seen from photographs of camel riders from Mauretania (cf. Puigaudeau 1945, ill. p. 128–129).

[564] The *térik* and *ahyas* saddles are always made by blacksmiths, and this is probably also the case with the Moorish riding saddles. But as mentioned above (p. 82 ff.) the Tuareg of Ayr make certain primitive riding saddles themselves, and these, called *kantarki* or *delobi*, are perhaps the prototypes of the more developed saddles made by the blacksmiths. Tuareg riding saddles for camels do not seem to have been introduced to Africa by the Arabs of the Peninsula where such saddles are unknown. The use of a single rein attached to a metal ring fixed in the right nostril of the riding camel is perhaps

492 171 an ancient North African custom. It is the method generally applied by the Tuareg and those Northern Arabs who use saddles of the *térik* or *tahyast* types; it is also practiced among the Moors of Mauretania (cf. Monteil 1952, Puigaudeau 1945, ill. p. 128–129), and is known to the Tebu (Cline 1950, p. 34). It would appear that the use of nostril rings for riding camels has much the same distribution in North Africa as have saddles of *térik* or *tahyast* types including the Moorish saddle, which is also placed in front of the animal's hump.

The Tuareg halter made of iron or metal shackles and used in connection with the nostril ring so that the camel is controlled by means of a double rein (*akeskabbu*; cf. p. 73, Fig. 50–52), is perhaps a combination of two originally different systems, for the Tebu use this peculiar halter without any attachment to a nostril ring, the camel being controlled by a single rein combined with the halter (cf. Le Coeur 1950, p. 133, pl. XXIX Figs. 111–112 & Cline 1950, p. 34).

136 174 114 Much has been written on the history of the camel in North Africa, and I do not want to take up this question in great detail as I can add very little to what is already known. René Basset's theory that the camel was first introduced by Arabs of the first invasion (Basset 1907) is contrary to all historical information, for we know with certainty that the camel was known to the Berbers before the Arabs arrived. Contemporary with Basset it was pointed out by Flammand, that skeletal remains of camels from North Africa proved the exsistence of these animals as early as "les temps quaternaire moyens" (Flammand 1907). But while Flammand states that the camel disappeared with a more humid climate, Cauvet later tried to substantiate the theory that the camel did not disappear, but continued to exist further south in Africa. Thus, he claims, the southern camel-breed descends from the ancient camel found in Africa even during the mio-pliocene of the tertiary period, while the northern breed was introduced by the Arabs (cf. Cauvet 1925–26, I, p. 15 ff.). I can agree with Cauvet's latter statement regarding a connection between northern camels and the Arabs, but his theory of the existence of the one-humped camel in Africa since tertiary time is most difficult to accept. The camel breed which existed in Africa prior to the Arab invasions was no doubt comparatively recently introduced from Asia. Barth pointed out that the camel came to North-western Africa about the beginning of the Christian era (Barth 1849, I, p. 3 ff.). This theory has later been supported by many scholars, notably by Gautier (Gautier 1928, p. 99 f., ed. 1946, p. 129 ff.; 1942, p. 190 ff.). Quite recently the various problems connected with the history of the camel in North Africa have been re-examined by Walz. He largely accepts Barth's theory of its introduction in antiquity, but also points out that the camel, which seems to appear in Egypt about 500 B.C. or somewhat earlier, may have been introduced to southern parts of Africa via the Bab-el-Mandeb Straits at an earlier date (Walz 1951, p. 29–51; 1954, p. 45–87).

Gautier states that the Romans had a certain responsibility for the introduction of the camel into North-Africa, though he also claims that it was introduced by the Berber-speaking *Zenata* tribes 174 177 (Gautier 1942, p. 209 f., 227). It is to be doubted that the Romans introduced the camel into North-Africa, and on the whole it seems as if the Romans have influenced Tuareg culture very slightly. It is difficult to point to any definite traits of material culture taken over from the Romans, though Foucauld states that certain lamps of Roman form are found in Tasilé-n-Ajjer (Foucauld 1951–52, III, p. 1399). A fair number of Latin words can be proved to exist in Tuareg dialects. This fact is

The cotton shirt of poncho cut (p. 289 ff.) is common to all Tuareg, and is widely found in North- 174
western Africa among the Moors as well as among the Hausa and other sedentary peoples of the 171
Sudan where I have seen it as far south as Accra and Abidjan. It is unknown to Berber-speaking tribes of the Atlas, though an almost identical type of garment is found among the Berbers of Siwa (Cline 1936, p. 31). Poncho shirts very akin to those used among the Tuareg are also found in the Fezzan, Tibesti, Borku, and Bornu (cf. Nachtigal 1879, I, p. 97, 189, 455 f., 646; Cline 1950, p. 40; Le Coeur 1950, p. 126, pl. XXVIII & XXXIV). It is possibly also this shirt to which Lebeuf refers from the Toda-Daza, from Kanem and Ouadai, and from the Arabs of the Lake Tchad region (Lebeuf 1959, p. 24, 44, 87, 97).

The large poncho-shirts used in North-western Africa were no doubt introduced before Islam, 174
and it is possible that we should class them with the so-called *Young Sudanese Culture* comprising refined cultural traits derived from the Near East including Egypt, and from India, for we note that the same type of garment was used among the Iranians of antiquity (cf. Birket-Smith 1948, p. 279). To the same culture complex should perhaps also be referred Tuareg sandals of the *takalmi* type which are largely used in the Sudan, and were known also in Ancient Egypt (cf. Chasseloup-Laubat 1938, p. 42, pl. XXIXa–c & Lhote 1950d, p. 528 ff.). The same is perhaps also true of sandals plaited of dum palm leaves and structurally related to *takalmi* sandals (cf. Zeltner 1914a, p. 367).

If we follow Baumann's definition of the Young Sudanese Culture there are other traits than those alluded to above which should perhaps be classified with this complex. Thus we note in particular socket-shafted implements and weapons, notably spears and adzes, while the normal axe, as well as the hoe among the sedentary *Kel Ayr*, are slot-shafted. The latter principle is considered a part of the so-called *Old Sudanese Culture* characterized by shifting cultivation with little developed agricultural techniques in contrast to the Young Sudanese Culture, which in its origin was perhaps connected with irrigation, terrace-building, and fertilizing. It is probable that we have conserved in Ayr certain traits of an old negroid culture based on shifting cultivation, and in this connection we note that the Ayr farmers do not harvest by means of the sickle, which by Baumann is also considered a Young Sudanese trait.

So far we have dealt with African Culture complexes that apparently have had very little importance 121
for the creation of Tuareg culture as we know it to-day. More important are the last two complexes to be mentioned, namely the East Hamitic Culture and the Eurafrican Steppe-hunting Culture. The Hamitic Culture established by Frobenius seems to contain traits from both complexes, and it is very possible that Frobenius in working out his Hamitic Culture was much influenced by Seligman's Old Hamitic Culture which has been recognized by many scholars (cf. Lagercrantz 1950, p. 6 f.).

Baumann's *East Hamitic Culture* constitutes the most reasonable culture complex among all 174
cultural groupings, for it contains traits which are largely connected with cattle and which seem to have very little meaning without. The East Hamitic Culture in many ways seem to constitute a true unit of traits that have penetrated into Africa with cattle. However, we must emphasize that it is not a functional unit in the sense that all these traits are highly necessary for cattle-breeding, and it
is very evident that all traits are not found where the so-called East Hamitic Culture occurs. Bau- 171
mann finds the East Hamitic Culture particularly well preserved in the Beja group, among the Danakil,

171 the Somali, and certain Galla, among the Nilo-Hamites and the Bahima, and in South-western Africa among such tribes as the Hottentots, the Herero, the Ovimbu, and others. The complex is mixed with other cultures among neighbouring Bantu-speaking peoples of southern Africa, and among the Nilotes. He states that the Fulani of the Western Sudan are culturally related to the East Hamites, but their historical origin is rather obscure. He also points out that certain traits of the East Hamitic complex are found among Arabs of the Eastern Sudan as far as Lake Tchad, where non-humped cattle of the *Bos primigenius* type seem to occur. Many authors have dealt with the distribution of the so-called East Hamitic traits, and Lagercrantz has published some very detailed maps of the distribution of certain milking customs of the East Hamitic complex (Lagercrantz 1950, p. 44 ff.). The traits mentioned by Lagercrantz have a larger distribution in Northern Africa than appears from his valuable maps. Thus the distribution of milking by inflating is indicated as practised in parts of South, East, and North-east Africa, and also in the Eastern Sudan, but it is not mentioned from the Sahara or from the Western Sudan. I have noted it among the Ayr Tuareg, and it is probably known elsewhere in the Western Sudan. Milking with the dummy-calf is shown to have a somewhat larger distribution. For North-western Africa it is mentioned among the Fulani of the Western Sudan, and in the Canary Islands. I can add that the method is common among the Ayr Tuareg, the *Kel Adṛaṛ* and probably also other groups of Sudanese Tuareg, and I have noted it also in Kabylia, from which region it has been earlier mentioned by Hanoteau and Letourneux in their large monograph on the Kabyle (Hanoteau & Letourneux 1893, I, p. 497). It can be added that it seems as though this custom is known to most camel-breeders of the Sahara and the Sudan. Milking by udder patting is shown by Lagercrantz to exist almost exclusively in South-west Africa, though there is one instance of this method being used among the Nuer. I can add that this method is applied among the Ayr Tuareg, and among the Tuareg of Ayr, Ahaggar, and adjacent Arab tribes it is used also for milking camels. Finally, with regard to blood-letting with spears or knives, Lagercrantz mentions this custom only in the case of certain peoples of the Lower Congo region, a few instances from the Nilotes and East Africa, the Hottentots and the Ayr Tuareg. We can confirm the occurrence among the Ayr Tuareg, and add that blood-letting also occurs among the Tebu, and perhaps among many other pastoral people of the desert. Other so-called East Hamitic traits have not been distributionally studied in great detail, but I believe that there are other resemblances between the so-called East Hamitic Culture and the culture of North-west African pastoralists, including that of the Tuareg, e.g., the custom of not drinking milk alone when the animals graze away from camp, the small knots carved into the bridge of a calf's nose to prevent sucking, a custom used among the Tuareg for both cattle and camels, and which has been mentioned from the Nilo-Hamites by Huntingford (verbal information). In other words we find that the bulk of East Hamitic cattle traits are found also in North-western Africa among the Tuareg, with the main exception that they do not use urine added to milk or for the cleaning of milking bowls. However, this custom is known in the Western Sudan. I have been told that it is done by the Fulani in the region south of Ayr (cf. also Dupire 1962, p. 87).

174 The distinction between pastoral North Hamites and pastoral East Hamites is not so great as is often believed. A great many usages are common to the two branches of pastoral Hamites, and one might ask if the milking customs found among the Tuareg and adjacent pastoralists do not derive

174 with hot stones, which is still used for certain dishes, constituted in the past a very important method of food preparation being used for milk, meat, and for vegetable dishes alike. Also an ancient implement is perhaps the quern-stone, though it has to be admitted that it occurs throughout the world in many farming cultures. Tuareg dishes known as *tébik* and *téderka* (cf. p. 175 ff., 251) should doubtless be considered very ancient, and this is probably also the case with Tuareg method of bread-baking which is different from the methods used among most North African farmers. Bread is frequently baked from wild seeds, and it is not made from true dough but rather from a kind of gruel to be baked according to the *abatul*-method.

171 The existence among the Tuareg of leather garments of simple poncho type is of particular interest, the more so as such shirts are extremely rare in Africa. In literature they seem to be mentioned only in the case of the Tebu, and there is a well-preserved shirt from this people in the Museé de l'homme (Paris). It is made of the skin of barbary sheep, and is sewn together at both sides, but the upper parts of the sides are left open to form very large and wide arm-holes; patches of leather with ornamented fringes are sewn to the shoulders to form a kind of open sleeves. This skin shirt, which resembles that of the Ahaggar Tuareg, is said to be worn by blacksmiths (Musée de l'homme, no 35.50.107). Le Coeur mentions leather shirts from the Tebu stating that they are but little used nowadays:— "Seuls les hommes de condition servile le portent encore". He provides a photograph showing a Tebu blacksmith in a long skin shirt which has a kind of open sleeves attached to the shoulders (Le Coeur 1950, p. 100, pl. XXXIII Fig. 124). Leather shirts are mentioned from Central Tibesti by Fuchs, who depicts a shirt of this kind which is now in the Museum für Völkerkunde in Vienna (Fuchs 1961, p. 23 f., Fig. 7 p. 24). Lebeuf says that among the Tebu, skin shirts are worn mainly by the Aza who make them from antelope skin, but they are also found among the Danoa of Kanem. These two peoples, the Aza and the Danoa, are related to each other. They never live in villages, but are roaming hunters who use the bow and arrow but mainly hunt by driving animals against cords. The Aza form small sections and are attached to the nomadic Daza as a kind of vassals (cf. Lebeuf 1959, p. 9, 16, 24, 39, 44). The origin of these peoples is uncertain. They seem to constitute remnants of an ancient hunting population.

174 Tuareg garments of leather or skin are in general of simple form and cut, and most probably constitute types of early dress development. This is perhaps also true of sandals of the *imerkeden* type, and perhaps even of skin stockings. If this be so it is very remarkable that we find among the Tuareg a poncho shirt of very primitive cut together with sandals and stockings, for we know from Hatt's brilliant analysis of arctic dress development that the oldest complex of skin garments in Arctic Eurasia and America – the so-called "Sandal System" – consists of (1) Clothing developed from the poncho type; (2) Breeches developed from leggings, in some cases probably from leggings combined with a triangular genital cloth; (3) Boots and shoes developed from stocking and sandals (cf. Hatt 1914, p. 214 ff. 1934, p. 2755 ff.).

121 [114] I think that this brief description of Tuareg culture in the light of African culture complexes can adequately be concluded as follows:— Most of Baumann's cultural groupings have little value for an analysis of the historical development of Tuareg culture. His classifications are often too vaguely defined, and he does not always substantiate his theories by archaeological facts. The so-called Old

Tuareg Dwelling Types

There are many distinct dwelling types within the extended territory dominated by the Tuareg. The 342* occurrence of all these types within this area definitely cannot be explained by mere reference to [121] anthropo-geographical factors for they rather indicate that cultural influences from the outside have been numerous.

In this description of the dwelling types in the Tuareg country I consider it proper to open with various types of fixed or non-portable dwellings which are used mainly by sedentary people, though sometimes also by pastoralists. In another section of this chapter I describe the true portable dwellings of the pastoral Tuareg.

A. NON-PORTABLE DWELLINGS

There seem to be nine main types, namely the following:—

A.1. Square or rectangular houses built of mud.
A.2. Square or rectangular houses built of mud and stone.
A.3. Square or rectangular houses built of stone.
A.4. Subterranean or semi-subterranean houses.
A.5. Square or rectangular huts (houses) covered with plant material.
A.6. Round houses with a conical roof.
A.7. Conical huts.
A.8. Beehive huts.
A.9. Barrel-vaulted huts.

Within these main groups there are certain sub-types. The way the non-portable dwellings have been listed does not indicate any evolutionary tie between them for there can be little doubt that most types within Tuareg country have their own history.

A.1. *Square or rectangular houses built of mud.* 342* 171 ●

Houses of this type have an extremely large distribution in Northern Africa. They are found in most oases of the Sahara, and are common in the large Sudanese towns or cities including Agadez. They are also found north of the true desert country. I have seen them up to the foot of the Tell Atlas around Boghâri, where they frequently have saddle roofs which was the case also with certain

[text continues on p.329]

houses I saw at Djelfa in the Sahara Atlas. Further south in the true desert, and also in adjacent 342* parts of the Sudan, mud houses have flat roofs. We see that mud houses are not limited to any partic- 171 ● ular environmental zone, and as a matter of fact they occur in the Sudanese zone even though they are not particularly well fitted for its climate. This fact has been emphasized by Capot-Rey who believes it an indication that mud houses have been imported from other regions (Capot-Rey 1953a, p. 231 f.).

There are two distinct types of mud houses in the Sahara. The common type is that built of sun-dried bricks. It is found in many oases and also in Sudanese towns and cities, including Agadez, where some houses are decorated with reliefs or paintings on the facades – a custom which to my knowledge is unknown further north in the desert. The other type of mud house is constructionally rather different from that built of sun-dried bricks. It is built of cones or balls of mud piled upon each other before they are dried in the sun. The distribution of such constructions is unknown. They are mentioned by Nicolas from Ingal and Tegidda-n-tésemt (Nicolas 1938, p. 67), and I have myself seen houses built in this way at these two towns. In Ayr there are very few mud houses built of sun-dried bricks except in Agadez, Ingal, and Tegidda-n-tésemṭ. In Ahaggar there are mud houses at Tamanṛaset and at Abalessa, but these dwellings are not common at other cultivation centres where most people have other dwelling types.

A.2. *Houses built of stones and mud.* 342*

Solid houses of this type occur in certain Ayr villages (e.g., Awderas). In some houses the rather heavy walls are built of mud into which the stones have been inserted, while the walls of other houses appear to be built of stones kept together by a thin layer of mud between them. In this latter case mud balls may substitute for stones, as mentioned by Rodd (Rodd 1926a, p. 238 ff.). The Ayr houses can be rectangular or square. Some houses have two or three rooms (cf. Fig. 246), but very few of the houses seem to be inhabited. The houses always have flat roofs in which wooden drain pipes are inserted. They do not generally have a closed courtyard at the front as have Arab mud houses.

Houses built of stones and mud are also found in certain villages of Ahaggar and Tasilé-n-Ajjer and are inhabited to-day by agriculturists. In Abalessa they are mixed with true mud houses, the 621 settlement being divided into four quarters as follows:— (1) *Arakayna* which is inhabited by black- 762 skinned agriculturists known as *Ikewweren* who are said to have immigrated from Tasilé-n-Ajjer. (2) *Bukhelfa* which is inhabited mainly by agriculturists whose ancestors were Tuareg slaves in Ahaggar. (3) *Éfeli-n-Dag Ṛali* mainly inhabited by agriculturists (*Ḥarratin*) who have immigrated from Tidikelt. (4) *Tinḍar* which is inhabited exclusively by agriculturists of Tidikelt. The two first village quarters are situated close to each other and have houses built of stone and mud in contrast to the two last quarters which are inhabited by Arabic-speaking *Ḥarratin* who live in true mud houses of the Arab type.

A.3. *Houses with dry walls.*

In Tasilé-n-Ajjer and in Ayr I have seen a few house ruins with walls of stones, but I was not able to judge whether the stones were originally kept together by thin layers of clay or similar material.

*342 ago when the *Ḥarratin* agriculturists immigrated from Tidikelt. Most people even aver that there 174 were hardly any houses in Ahaggar until the arrival of the French at the beginning of the century. This is confirmed by Foucauld (1951–52, II, p. 609), and Bissuel was told by the Tuareg captives at 361 Algiers that Abalessa had no solid houses but only straw-huts (cf. Bissuel 1888, p. 53). It is true that 125 Hornemann mentions a village comprising 25–30 houses built of stone and situated in the country *[342] of Hhagarà (Hornemann 1803, I, p. 154 f.). But Hornemann travelled further east and never visited Ahaggar or Tasili-n-Ajjer. His information may perhaps refer to a village in the latter region also inhabited by noble *Ihaggaren* Tuareg. Permanent settlements of Ahaggar are apparently never mentioned in the writings of Medieval Arab authors. We know that Ahaggar was visited by Ibn Batutah. He does not mention any settlements in this country, of which and its inhabitants "there is little good to say" (Ibn Batutah IV, p. 446).

*342 A.4. *Subterranean or semi-subterranean dwellings.*

●[171] [563] Subterranean or semi-subterranean dwellings seem to be unknown in Ayr and also in the regions inhabited by most other Southern Tuareg though found among sedentary people along the Niger Bend (cf. Hefel 1946, p. 190 ff.). They are known also in Ahaggar where they are used exclusively by black-skinned agriculturists who claim that this type of dwelling named *eddamus* was introduced into Ahaggar with the *Kel Ġanet*. This agrees with the fact that these dwellings are particularly common in the region of Taḥhawhawt where many of the *Kel Ġanet* live. However, subterranean dwellings nowadays are also used by certain other sedentary agriculturists of Ahaggar. The dwellings are not very deep, and frequently they are only semi-subterranean, the upper part then consisting of walls built of rectangular pieces of sundried mud or of stones kept together by mud. The subterranean or semi-subterranean dwelling normally has a rectangular site, and is not very spacious. Introduced by the *Kel Ġanet*, this type of dwelling is comparatively recent in Ahaggar. I have not seen subterranean

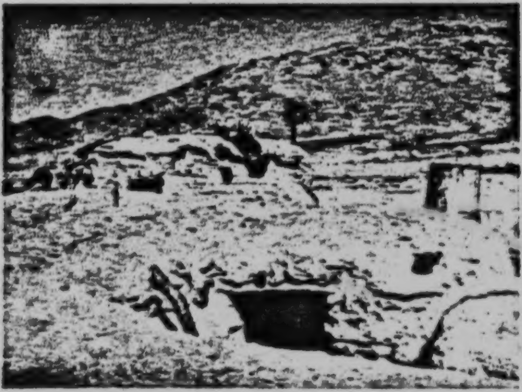

Fig. 248. Semi-subterranean house with two rooms (*eddamus*). Ahaggar, I-n-[illegible].

*342 *342 ● 171 houses in Ganet or elsewhere in Tasilé-n-Ajjer, but I have been told that they exist in these regions to this day. Various types of subterranean dwellings are recorded as existing further north in the Sahara and in the Atlas. Semi-dugouts roofed with brush are occasionally used among the Chamba (Briggs 1958, p. 120), and it is interesting to note that subterranean dwellings also occur among the semi-nomadic Chawiya of Aurès, who use such dwellings only when they live with their flocks in the desert south of the mountain massif (cf. Rivière 1938). Elsewhere in Northern Africa they seem to be found exclusively among sedentary peoples. The main area of distribution is the Atlas, Tripolitania, the northern parts of the Western Sahara, and the Western Sudan (cf. Hefel 1946 & Le Moal 1960). Frobenius considered the subterranean dwelling a so-called "Hamitic" trait (Frobenius [174] 1933, p. 214 ff.). Recent investigations seem to indicate that this particular dwelling type was introduced to North Africa by contact with civilizations of the Western Mediterranean in pre-Christian times (cf. Hefel 1946).

*342 A.5. *Square or rectangular huts covered with plant material.*

The dwellings to be described under this item should perhaps be termed houses rather than huts as [184] they have walls and roof made separately. They fall into two sub-types one of which is characteristic of Ayr, the other of Ahaggar and Tasilé-n-Ajjer. The two types may be historically related, but this cannot be taken for granted, for constructionally they are somewhat different.

A.5.a. In Ayr the square or rectangular hut is called *téjira*, and is found mainly among sedentary people of the *Kel Ewey* group. It is never used by pastoralists. The structure of this hut can be described in the following way:—

Nine heavy and forked poles are fixed solidly in the ground in three rows parallel to each other. In other words there are three poles in each row. These poles are called *tigettewin* (sing. *tégettewt*), the word generally used for various kinds of prongs and forked sticks or poles.

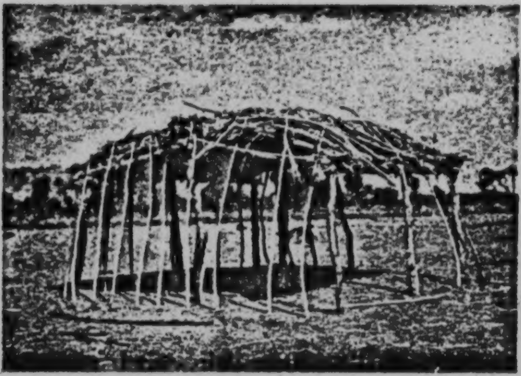

Fig. 249a. Straw-hut of the *téjira* type. The wooden skeleton of the hut with the roof covered. Ayr, Iferwan.

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[824]

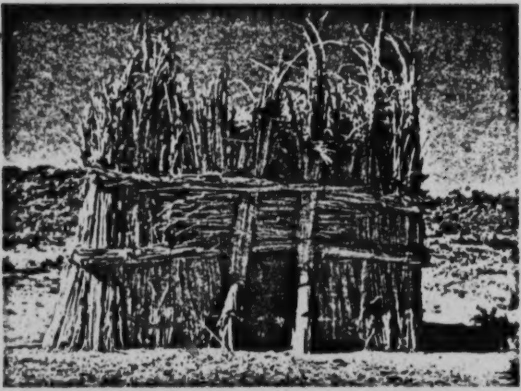

Fig. 250. A square *ékeber* hut covered with bulrush. Ahaggar, Amsel.

parallel to each other. The middle pole of the central row of poles is somewhat higher than all the other poles, connected with each other by means of laths resting in the prongs to form a square frame, which may be supported by one or two subsidiary forked poles if considered necessary. Slender boughs or laths are fastened to the horizontal laths and to the top of the forked central pole, and other slender boughs are placed over them to form the foundation of the roof-covering which consists of plant material. If bulrush is available this material is preferred, but hay of various grasses is also used. The walls of the hut are generally covered with the same material as the roof. If walls are covered with bulrush its very long stems are placed vertically around the hut-frame and attached to [824] it by means of one or two horizontal bands of the same material (cf. Fig. 250). If hay of grasses (e.g., *tullult*; *Aristida pungens*) is employed for wall covering it is necessary to insert boughs or sticks leaning against the square frame to support the bunches of hay which are kept to the wooden structure by means of cords. I was told by old people of Ahaggar that the square *ékeber* hut was introduced to Ahaggar with the immigration of the *Kel Ǵanet*. This is very likely, for I have seen identical huts at the oasis of Ǵanet and also among some pastoral Tuareg of Tasilé-n-Ajjer. Some huts have only one entrance which is placed at the middle of one of the walls, but huts may also have two openings sited opposite to each other to provide a current of air. The door-openings can be closed by means of a shutter made from bulrush, grass-stems, or palm material. The square *ékeber* hut is generally so high that grown people can stand upright within it.

*342 ● 171 Huts akin to the square *ékeber* hut of Northern Tuareg country seem to have a rather wide distribution in adjacent parts of North Africa. They are used in the Fezzan from where they have been described in some detail by Scarin and Despois (Scarin 1934, I, p. 110 ff. Despois 1946, p. 80 ff., pl. XIX-XXI). It is possible that square huts of the *ékeber* type also occur at El Golea in the north of Algerian Sahara (Collection Photographique du Musée de l'homme, 34.1019.222), at Ksar El Azoudj of Oued Zousfana south of Monts des Ksours of the Sahara Atlas (Collection Photographique du

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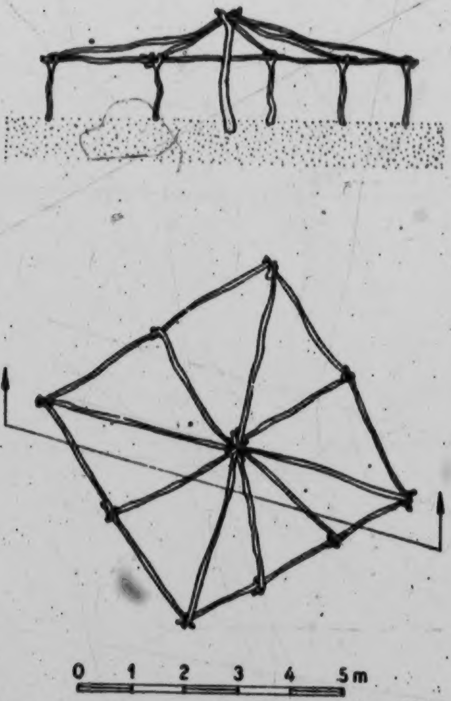

Fig. 251. The structure of a square *ékeber* hut. It was covered with bulrush and belonged to a camp of the *Kel Ṛela* tribe at Utul in Ahaggar.

Musée de l'homme, E.47.48.526), and perhaps also in Southern Morocco (Puigaudeau 1945, photograph p. 112). It is possible that huts of the square *ékeber* type are far more widely known in the Northern Sahara. Huts (*zeriba*) of palm material among the semi-sedentary *Chamba Bereẓga* at Metlili (cf. Mercier 1922, p. 144) may perhaps be of the square *ékeber* type – if they do not belong to the cylindrical type mentioned below. Square huts (*zarbia*) seem to occur also among the Fellaḥin of Egypt (cf. Ayrout 1938, pl. V, p. 64, p. 134; Schildt 1957, ill. p. 112). Rectangular huts measuring 6 by 2 metres are common in the region of Gurara (cf. Bisson, Le Gourara, p. 158). 342* 171 ●

A 6. *Round huts or houses with conical roof.*

Huts of this type, known as *ékeber* (pl. *ikebran*), are very common among the Tuareg of Tasilé-n-Ajjer, where the *tabarekkat* tree (*Tamarix aphylla*) and the *tullult* grass (*Aristida pungens*) are abundant, [137] cleft at their tops to provide a sort of prong to support horizontal laths and roof laths. These dwellings 342* were not built by the Tuareg themselves, but were erected by sedentary agriculturists of Abalessa who assisted the Tuareg during harvest. It is most likely that there is a connection between these huts and those used among pastoral Tuareg of Tasilé-n-Ajjer, for they are built according to the same structural principle.

Three huts constructionally somewhat akin to the round *ékeber* described above from Ahaggar were seen at Abalessa. The huts were inhabited by blacksmiths (*Ineḍen*), who had immigrated from [564] Adraṛ of the Iforas comparatively recently, and they claimed that the huts were built according to a method generally applied in their original homeland.

The photograph Fig. 254 taken by Dr. Erik Smidt, Copenhagen, who has travelled in Tripolitania and in the Fezzan, shows a cylindrical hut with a conical roof of a type found in the latter region. Huts or houses of much the same type are also depicted by Barth from Éderi (cf. Barth 1857–58, I, ill. p. 153). I believe that all these dwellings built of plant material in the regions of Ahaggar, Tasilé-n-Ajjer, the Fezzan, and Tripolitania are related to each other, and they are perhaps also historically related to cylindrical houses with more solid walls built of stone. I have in fact seen one such dwelling in Tasilé-n-Ajjer (in Oued Aharhar close to Afara).

Cylindrical huts and houses are used for summer dwellings by the people of Medenine in 342* Tunisia where these dwellings fall into two groups:— (1) the *kib* which is covered with mats, and 171 (2) the *lahia* which has a wall built of stone (cf. Bernard 1924, p. 19 f.). The cylindrical mat-covered hut, the *kib*, is also described from Tunisia by Despois. It has a central post fixed in the ground and carrying a cross-bar which is further supported by two poles — one at each of the ends of the cross-bar. Certain huts, also known as *kib*, have an oblong form, but most of them are cylindrical. Certain huts are portable, but the majority is a kind of permanent or semi-permanent dwelling for poor people during the summer (cf. Despois 1955, p. 404 f., pl. XVI Fig. 1).

Cylindrical huts or houses with conical roofs seem to be of very great age in North Africa, having been known to the ancient Eastern Libyans (cf. Bates 1914, p. 169 f.). Great age must no doubt also be attached to cylindrical buildings with conical roofs used as barns among the Kabyle of Djurdjura.

Cylindrical houses or huts with conical roofs also occur within Southern Tuareg country, but they 342* are to my knowledge nowhere built by pastoral Tuareg of this extended region. In Ayr I have noticed that such huts or houses are also extremely rarely used by sedentary agriculturists. I have only seen this dwelling form at Iferwan and at Ingal.

At Iferwan there seemed to be only two cylindrical dwellings which were built within a sort of compound together with a square *téjira* hut and a beehive hut (cf. A.5.a & A.8.). Both buildings [171] were thatched with straw, which at the top was formed into a kind of tuft as is frequently seen with some Sudanese huts. One of them had a cylindrical wall consisting of a piece of matting, while the other had a wall plastered with mud – also very common in Sudanese villages. I believe that the forms of both dwellings were due to Sudanese influence, but I did not investigate their structure. That cylindrical huts or houses with conical roofs occur at Iferwan has also been mentioned by Foureau (Foureau 1905, p. 883 ff.).

34 The hut I saw at Ingal was situated close to the market place, and was apparently not used as an ordinary dwelling. It had a low cylindrical mud wall and a high, conical roof covered with straw.

*342 171 It is curious that cylindrical houses with conical roofs are so extremely rare in Ayr and its adjacent regions, for they have a very wide distribution among sedentary shifting cultivators of Damergu, and I have seen them almost everywhere in the region between Zinder and Dakar. There can thus be little doubt that they play a part for many sedentary agriculturists living in the regions dominated by such Sudanese Tuareg as the *Kel Geres*, the *Iwllemmeden*, and the group of *Kel Tademaket*. Among sedentary farmers of the Ader area in the *Kel Dennek* territory, Nicolas mentions and depicts a typical Sudanese cylindrical house with a conical roof (Nicolas 1938, p. III p. 63 & 1950a, p. 156 f.), but it does not appear that this type of dwelling is used by the Tuareg or by negroid castes of Tuareg society. Nicolas also mentions a straw hut of the *Kel Dennek* Tuareg, but this is so unsatisfactorily described that it is impossible to gain any clear idea of its form and construction – despite illustrations. In an early study this hut (*akaber*) is described as a cylindrical hut with a flat roof (Nicolas 1938, p. 61, pl. I p. 55), while in the later book on the *Kel Dennek* he mentions a hut called *akarben* (*ekarben*) which seems to be of cylindrical form. It has a central post named *tamâkait* (*tamankayt*) and, perhaps, a slightly elevated roof (cf. Nicolas 1950a, pl. VIII, p. 155). In both studies Nicolas says that straw-huts of this type are used mainly by slaves or manumitted slaves who are semi-sedentary, but he adds that in the very hot season certain Tuareg make their slaves build for them huts of this kind.

*342 174 It is possible that cylindrical houses, including barns like those used in the Sudan, were introduced to certain oases of Adrar-Timimoun from the south (cf. Stuart 1936, p. 299, ill. p. 256, 294). Sudanese Negroes may in fact have been responsible for the distribution of these dwellings even as far north as Morocco. This is stated by Despois, who is of the opinion that the cylindrical huts or houses with conical roofs (called *nwala* while the proper name is *kabbusa*) were introduced with black-skinned troops coming to Morocco from the Niger Bend during the 17th century A.D. The relations between the Sudan and Morocco initiated at the end of the 16th century by Sultan *Aḥmed al-Manṣur*, gave rise to the immigration of negroid peoples who took dwellings of the *nwala* type with them (Despois 1949, p. 308 f., 529, pl. VI B.).

*342 171 I think we may conclude our analysis of cylindrical huts or houses with conical roofs as follows:—(1) It is most probable that they are very ancient and traditional to many vassal tribes of Tasilé-n-Ajjer. To-day they constitute their prominent type of dwelling, which should probably be viewed in connection with the occurrence of related dwelling forms in the Fezzan, and in Tripolitania – the more so as it seems as if many cultural traits and migrations of peoples have followed the route from the Mediterranean via Tripolitania and the Fezzan to Tasilé-n-Ajjer. We know that the type was used among the Eastern Libyans of Antiquity. I believe cylindrical dwellings of Ahaggar like those used among certain Tuareg of the *Amenukal*'s camp and those found at Silet, are probably historically related to the cylindrical dwellings of Tasilé-n-Ajjer. (2) It seems as if cylindrical huts or houses with conical roofs are rarely used by Sudanese Tuareg, though they are common among sedentary agriculturists within the territory dominated by Southern Tuareg groups. These Sudanese dwellings have spread northwards in the Western Sahara via Tawat to Morocco. – We see that distributional studies of cultural traits are extremely difficult and liable to give very wrong results. It might have been natural

to have suggested a direct historical relationship between the cylindrical dwellings of Morocco and 342*
those occurring further east in the Atlas. But it seems to be a fact that this dwelling type has been 171
introduced fairly recently into Morocco, while in the Eastern Atlas and adjacent regions it dates very far back in time. Distributional studies of dwelling types should consider their structural features. Identical outer forms showing continuous distribution do not necessarily have the same historical origin.

A.7. *Conical huts.*

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They are very rare in Tuareg country where I have never seen them. They are mentioned by Nicolas from the *Kel Dennek* among whom they are used by semi-sedentary slaves (Nicolas 1938, p. 62 ff. & 1950a, p. 156 f.). Huts of this type seem to be common further east in the Sudan around Lake [171]
Tchad (cf. Foureau 1905, III, p. 963, 984).

A.8. *Beehive huts.*

Conical huts and beehive huts are believed to be among the oldest types of huts known to mankind 342*
(cf. Birket-Smith 1948, p. 311 f.). This is a reasonable hypothesis because such dwellings are typical 121
of many primitive peoples with a mixed hunting and collecting economy. It is also evident that these dwelling types are often very plain in their structure. There is a resemblance between beehive huts and so-called barrel-vaulted huts, and many authors have grouped these dwellings together under the designation of "dome-shaped huts". As I attach a great value to a classification of traits based on detailed analysis of structure, I distinguish between beehive huts and barrel-vaulted huts.

Though beehive huts are typical of many peoples at a primitive economic stage they are nevertheless extremely common also at more developed cultural levels. I believe that the fact that true beehive [171]
huts are widely used among many agriculturists of Northern Africa, while they seem to be less common among pastoralists who tend to use barrel-vaulted huts or other dwelling types has tended to be lost sight of.

I have never seen true beehive huts in Northern Tuareg country, and they are not mentioned in 342*
literature from this part of the Sahara. However, in the collection of the Musée de l'homme a photograph (V. 31.1557.99), stated to be taken in an oasis of Tasilé-n-Ajjer, shows a beehive hut, or perhaps a barrel-vaulted hut.

Beehive huts form the most important type of dwelling for the sedentary agriculturists of Ayr, and huts of beehive form are occasionally erected also by pastoralists. I have noted the following types of beehive structures among the *Kel Ayr*:—

A.8.a. A very simple beehive hut known to the Tuareg as *atṛam*. The structure consists of slender boughs (*imeseḳten*; no singular form) which are fixed in the ground, bent against each other, and attached each to each at their tops. This simple structure is covered with bunches of straw of *afezu* grass (*Panicum turgidum*) fastened to the skeleton of bent boughs by means of cords. Such huts are not used in ordinary camps of the pastoral *Kel Ferwan* Tuareg who make these simple dwellings for temporary use. Herdsmen, for instance, build them when herding camels or flocks away from the

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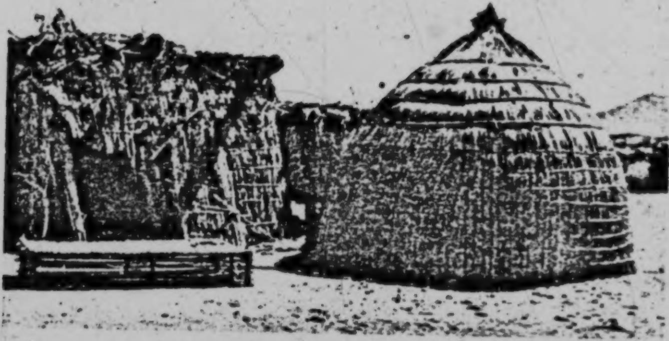

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Fig. 257. A square *séjira* hut (left) and a beehive hut of the *tatramt* type (right). To the left is also seen a bed of palm fronds lashed together with hide. These beds are used by sedentary agriculturists. Ayr, Awderas.

palm leaves. The upper part of the hut is generally covered with palm leaves kept together by means of outer circular rods, but, before the roof is laid on, a small plaited mat attached to a wooden frame and known as *tégelengelt* (pl. *tigelengelin*) is placed over the top of the structure as a protection against rain. Seen from the outside beehive huts of this type bear a resemblance to cylindrical huts with conical roofs. Beehive huts of the structure just described vary much in size. A normal hut is about 1.75–2.00 metres high with a diameter of about 2.50–3.00 metres.

Beehive huts possibly different from those mentioned above are described by Rodd. They are said to have a frame made of palm-frond ribs planted in the ground and tied together at the top, and [103] according to illustrations they are covered exclusively with straw. Rodd's illustrations of beehive huts are taken from the villages of Towar and Timia (Rodd 1926a, p. 184, pl. 20). Huts akin to those mentioned by Rodd have also been depicted by Buchanan (Buchanan 1926, p. 140).

Beehive huts are extremely common in Southern Tuareg countries and adjacent regions. In Ayr I have seen beehive huts of the *tatramt* type in all villages visited from Iferwan to Agadez, and they *342 also occur in Damergu together with cylindrical huts with conical roofs. I have not seen beehive huts ●171 at Zinder, but they are found among the sedentary Hausa of the Birni – N'Koni region – according to the excellent exhibition of the IFAN Museum at Niamey. Hausa beehive huts differ as to construction. Some huts have a cylindrical wall built of mud and supporting the roof, which may also be plastered with mud at the inner side, while other huts have a cylindrical mud wall inside the lower part of the structure and a pronged central post to support the roof. There are also very simple beehive huts which serve for sleeping huts; they are sometimes placed upon high platforms where mosquitoes are less embarrassing. Beehive huts are extremely common along the Niger where I have seen them almost everywhere between Niamey and Ayoru. The Zerma-Sonray and related peoples of this region 342* have huts made of boughs burried in the ground, lashed at their tops, and supported by a pronged 171 central post equally fixed in the ground. Some huts have a cylindrical mud wall inside the structure as among the Hausa. Beehive huts are depicted from Gao by Barth (Barth 1857–58, V, p. 216), from Faraka by Frobenius (Frobenius 1933, p. 233), and from Timbuktu by Caillié (Caillié 1830, Atlas). Around Timbuktu beehive huts are used by *Bella*, and also by Arabs of the Berabich belonging to the Cherif class or to the blacksmith caste. These Timbuktu huts are described in some detail by Dupuis-Yakouba and by Miner (Dupuis-Yakouba 1921, p. 20; Miner 1953, p. 19, 36 f., 40, ill. p. 61). It seems as if beehive huts also occur at Djénné (Dubois 1897, ill. p. 210, 232), and it is stated by Monteil that pastoral Fulani of this region have beehive huts with a central post (Monteil 1932, p. 214). According to the exhibition of the IFAN Museum at Niamey there are also simple beehive huts among the Fulani within the Niger Republique. This was confirmed by informants of Niamy, and my friend Johannes Larsen, civil engineer of Northern Nigeria, has informed me that beehive huts are common among the Fulani of this region. Further east in the Sudan there are beehive huts towards the region of Lake Tchad (cf. Foureau 1905, III, p. 948 f.).

Beehive huts play a great part for sedentary peoples of the Sudan, and they are perhaps far more common than generally assumed, as many huts which appear from the outside to be cylindrical huts with conical roofs may structurally be beehive huts. This is obviously the case with a "Kegeldachhütte" described from Faraka by Frobenius (Frobenius 1933, p. 233), and the dwelling described by Fuchs as "das Kegeldachhaus der Tubu" seems to be a beehive hut supplied with a cylindrical stone wall on the inside of the lower part of the structure (cf. Fuchs 1961, p. 15 ff.). Further north than Tibesti, where beehive huts seem to constitute the prominent dwelling type in villages, this type of dome-shaped dwelling seems to be rare. But Briggs states that hemispherical huts are found among

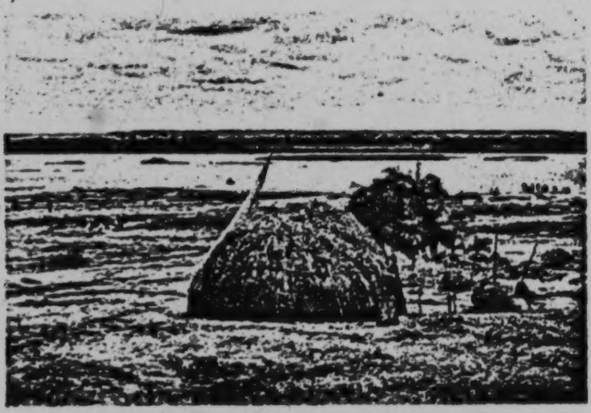

Fig. 258. A beehive hut of Zerma fishermen at Niamey on the Niger.

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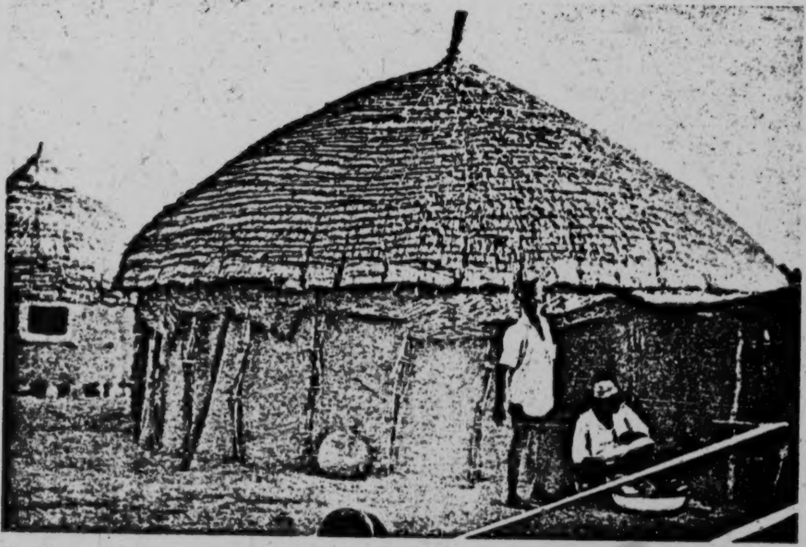

Fig. 259. Sonray dwelling resembling a cylindrical house with conical roof. Structurally it is a beehive hut consisting of 30 semiarches each made from a bundle of lashed rods and connected at their tops. The structure is supported by a heavy central post (*bongere*) buried in the ground. The upper part of the structure carries the thatched roof while the lower part is uncovered but surrounded by a cylindrical mud wall on the inside. The hut has a diameter of 5–6 metres and a little barrel-vaulted hut (*tongotongo*) covered with mats is erected within it. To the right is a simple sunshade serving as the workshop of three weaving men. The photograph was taken at the IFAN-Museum, Niamey.

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the Chamba (Briggs 1958, p. 120), and beehive huts are also mentioned from Tunesia (Bernard 1924, pl. II) and from Tripolis, where they may have been introduced by Sudanese Negroes (cf. Todd 1912, ill. p. 90, 102). As far as I know beehive huts do not occur in the Algerian Atlas, but I have seen a kind of beehive structure erected in a market place of a Kabyle village. It seems as if beehive huts are found in Morocco (Meakin 1902, p. 48 f.; Coon 1931, pl. 22 p. 72) and they may perhaps be more widely found in the Atlas, as a great variety of huts mentioned in literature on North Africa is known by the term *gurbi*.

Beehive huts of various types exist within very different economic cultures of Northern Africa. Their distribution does not correspond with that of any African cultural complex. There may seem to be some agreement between the distribution of beehive huts and the distribution of certain traits of the Eurafrican Steppe-Hunting Culture. However, these distributions are not identical, and distributions of culture elements should be studied very carefully. [177] Migrations and trading expeditions have greatly influenced the distributions of traits in Northern Africa.

A.9. *Barrel-vaulted huts*

A barrel-vaulted dwelling according to my difinition is "a dwelling with a certain number of parallel 342* arches which form the main support for the rest of the structure". Non-portable dwellings of barrel- 171 ● vaulted structure are far less important in North-west Africa than beehive huts. They seem to be known in the Fezzan area (cf. Scarin 1934, I, phot. 81 p. 169), and they are found along the Niger where they are not always used for dwellings but frequently serve as store-rooms, and the like.

There are a few barrel-vaulted huts in most Ayr villages but everywhere they constitute a minority 342* compared with other dwellings. The origin of barrel-vaulted village dwellings is not very difficult to determine. The name of such a hut is *éhen*, which is the word also used for the portable barrel-vaulted dwelling of Ayr pastoralists, and there is often very little difference between small barrel-vaulted huts and the portable dwellings of pastoralists. But barrel-vaulted huts of sedentary people have adopted some of the structural elements found in beehive huts. Most barrel-vaulted huts of the [462] Ayr villages can be described as a hybrid type of dwelling, which seems to have been adopted as a result of contact with pastoralists, largely because village farmers have married pastoral women, for barrel-vaulted huts, like beehive huts, are built by women, and portable barrel-vaulted dwellings are also made by women among pastoral Tuareg.

The following is the structure of a normal barrel-vaulted hut of the Ayr villages:

(1) Three arches made of slender rods of *ébizgen* (*Salvadora persica*), or from midribs of palm leaves, which are lashed together in a bundle. These arches are similar to those used for beehive huts (cf. A.8.c.) and they are also called *igegan* (sing. *egegu*).

(2) The three arches are fastened to short heavy poles (*isekṭan*, sing. *asekṭu*) buried in the ground on the same system as that used for beehive huts, but the arches are placed parallel to one another, and the middle arch is higher than the two outer arches.

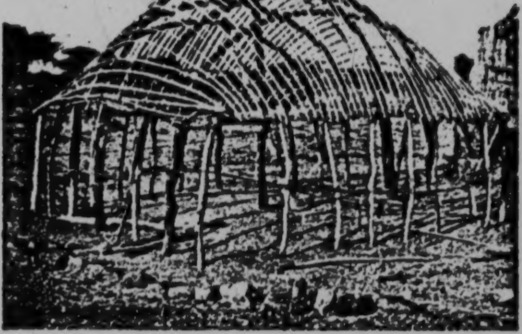

Fig. 260. The wooden skeleton of a large *éhen* hut. Ayr, Azzal.

or two arches according to its size. The arches are known as *igagan* (sing. *agĕgu*). They consist of several rods lashed together with plant material. According to Nicolas, these tents are used by semi-nomads and also by members of the *Kel Ansar* tribe who live half of the year in the southern agricultural zone where they use mat tents. The rest of the time these Tuareg live in skin tents which form the traditional dwelling of the *Kel Dennek* (Nicolas 1938, p. 62; 1950a, p. 156 f.). T 342*

Many other authors have mentioned the existence of mat tents of arch construction in Southern Tuareg country, but no description of their structure has so far been furnished.

Barth states that Tagāma and many vassals of the *Iwllemmeden* have portable huts covered with mats (Barth 1857–58, I, p. 372 f.). He adds that the inhabitants of these dwellings have fairer skins than the *Kel Ewey* Tuareg (Barth 1857–58, I, p. 597 f.). Barth also mentions the occurrence of mat-covered dwellings at an Issábegen camp on the Niger between Burem and Gao. These dwellings belonged to Arabs of the *Bū 'Ali* tribe, and to Tuareg of the *Kel-e'-Ssūk*. The mat-covered huts had two openings turning north and south (Barth 1857–58, V, p. 201). T [142] T [171] ●

Hourst depicts mat-covered arched dwellings at Rhergo on the Niger. One of his photographs shows a hut which, judging its outer form, is perhaps identical with the mat-covered tent of the Ayr Tuareg and the *Kel Geres*. The dwellings depicted by Hourst belonged to dark-skinned cherifs of the noble Tuareg tribe called *Igwadaren* (Hourst 1898, p. 105 ff., 133).

Chudeau depicts mat-covered arched dwellings belonging to the *Bélla* of the Niger. These dwellings apparently belong to the *éwerwer* type (cf. p. 350 f.) (Chudeau 1909, p. XXXII–XXXIII p. 218).

Delafosse states that the Tuareg have hemispherical dwellings covered with mats (Delafosse 1912, I, p. 334).

Le Coeur has seen mat-covered arched dwellings at Gao and at Tabankort south-west of Adrar of the Ifoṛas (Le Coeur 1937, p. 42 f.), and a photograph in the collection of Musée de l'homme seems to indicate that such dwellings are found in "Adrar Nigritien" (Collection Photographique du Musée de l'homme, Cl. Nieger, 34.1105).

Gabus says that among the Tuareg of the Niger the *Bélla* live in mat-covered tents. The noble Tuareg have skin tents, but they live in mat-covered tents or in straw-huts during the months of April, May, and June (Gabus 1945, p. 361).

We can add that the Sonṛay, who live within the Southern Tuareg country along the Niger, also largely use mat-covered arched dwellings. This is richly documented in literature:— Barth 1857–58, V, p. 160, 163, 165 f.; Dubois 1897, p. 232 f. & 1911, p. 33; Aymard 1908, p. 183 & 1911, p. 144 pl. 25; Olufsen 1928, p. 137; Urvoy 1942, pl. II, 3; Gabus 1948a, p. 10 & 1948b, p. 15; Prost 1954, p. 184 ff.; Rouch 1954, p. 31 f.). These barrel-vaulted mat-covered dwellings of the Sonṛay do not seem to be structurally identical with those used among pastoral Tuareg – for they seem to lack the horizontal cross-bars at the narrow sides. The mat-covered huts or tents I saw between Niamey and Ayoru along the Niger were covered with a kind of *éwerwer* mats and almost hemispherical in form – like two mat-covered huts (from the Woggo and the Kurtey) which are now in the IFAN Museum at Niamey. T 342* 171 S 342 [171] [31] [113]

Gabus states as his opinion that the Sonṛay dwellings are related to Tuareg mat tents by which they have been strongly influenced (Gabus 1948a, p. 10 & 1948b, p. 15). I believe that their origin may perhaps be explained by the fact that the Sonṛay have been culturally influenced by Tuareg invaders S [172]

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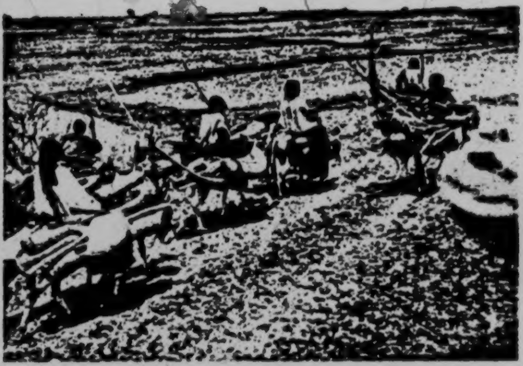

Fig. 266. Three mat tents, three heavy wooden beds, and the household utensils belonging to three households are moved by means of six donkeys. Ayr, the *Imezzureg* tribe.

*T
342 from the north from very ancient times (cf. p. 412), and, according to Rouch, we find that mat-covered
●171 barrel-vaulted huts do not constitute the traditional type of dwelling of all Sonray, but are found
S along the Niger between Timbuktu and Asongo, while the Sonray living outside of this area have
342 other dwelling types (cf. Rouch 1954, p. 31). Thus we see that Sonray mat-covered arched dwellings
177 are found precisely within the area which has been most strongly influenced by Tuareg culture, namely
S the upper part of the Niger Bend. It can be added that such dwellings do not seem to be typical of
[462] other African peoples who lead a predominantly sedentary life. Furthermore, Sonray mat-covered barrel-vaulted dwellings are built by the women, who are also the true owners of the huts (cf. Rouch 1954, p. 31). In this we find another parallel to traditional Tuareg custom.

T
*342 We see again how wrong it is to speak of the Ayr Tuareg mat tent as a dwelling particular to the *Kel Ewey*, for such mat-covered tents are used by most Ayr Tuareg from the northern outskirts of the Massif to Damergu; it is said to be used exclusively by the *Kel Geres*; it is known among certain *Kel Dennek*, among the *Iwllemmeden Kel Ataram* and their *Bélla*, and apparently even in the southernmost parts of the *Kel Adrar* country. Arched mat tents on the southern outskirts of the very vast area inhabited by Tuareg occur in an almost unbroken line in a huge semicircle running from Northern Ayr to Timbuktu.

T
*342
171 This distribution may perhaps indicate that the mat tent is of very ancient standing among the Tuareg. We have mentioned above that the mat-covered arched dwellings of the Sonray may have been adopted by these people through contact with the Tuareg, and it does not seem as if the latter adopted their arched mat tents as a result of contact with other Sudanese peoples who use barrel-vaulted dwellings. Barrel-vaulted dwellings are not common in the Western Sudan, but are found among certain pastoralists whose arched huts and tents are structurally very different from the barrel-vaulted Tuareg mat tent. This appears from literature about the *Fulani* and the *Toucouleurs* (cf. Urvoy

1952, pl. II, 4; Desplagnes 1907, pl. CVI p. 396). Various pastoralists within the huge area of Tibesti, 342* Borku, and Ennedi also use barrel-vaulted mat-covered tents. These are very different from Tuareg 171 ● mat tents (cf. Biassuti 1933, Fig. 2, p. 173; Despois 1946, pl. XXII; Le Coeur 1937, p. 39 & 1950, p. 192, pl. XXVI, 99; Schiffers 1957, pl. IV; Kronenberg 1959, pl. III; Fuchs 1961, p. 18 ff., pl. IV). However, a mat tent described in detail by Chapelle has a structure which includes pronged sticks and horizontal bars (Chapelle 1957, p. 227 ff.), and a Tebu tent from Bilma now in the IFAN Museum at Niamey resembles the mat-covered Ayr tent in having two horizontal cross-bars at the narrow sides – each bar resting upon seven vertical pronged sticks.

We presume that Tuareg mat tents constitute a very ancient and traditional type of dwelling, which, 342* perhaps, was originally covered with mats of grass-stems (cf. p. 350 f.). We venture to advance this [174] theory, the more so as other types of Tuareg tents less elaborate in their structures show very close affinities with the arched mat tent. Our theory, however, gives rise to one important question:— Is 182 the elaborate structure of Tuareg mat tents well fitted to pastoral life? 342*

It is evident that some of the Tuareg, who live in mat tents, and notably the *Bélla*, are semi-nomads, and Capot-Rey says that "– – les populations qui l'ont adoptée ne se deplacent presque plus; – –" (Capot-Rey 1953a, p. 222). This is not correct. Mat tents like that described in B.I.a. are used by [221] true nomads, who move much during the rainy season to find the best annual pasture for their domestic animals. At that season many pastoralists move their camps of barrel-vaulted tents about once a week, and though some of them prefer to erect their tents according to the simple *tafala* method (cf. B.I.f., p. 356), most nomads will erect the tent in the ordinary fashion. It may be added that even the *Kel Geres* who come to Southern Ayr at the end of the rains have with them their mat tents which they erect correctly. There are, it is true, many Tuareg possessing mat tents who remain almost on the same spot throughout the year, but this is equally true of many Tuareg with skin tents. The mat tent is a true pastoral dwelling type. It is not very difficult to put up though it takes more time than does the erection of most skin tents. It is also not very difficult to transport the comparatively elaborate 182 structure of normal mat tents. With few exceptions the pastoral *Kel Ayr* who live in and around the 342* Massif use donkeys for tent transportation. The light tent mats are simply used as a kind of pack- 492 saddle, being rolled up and placed over the back and along both sides of the pack-animal. The curved boughs and rods which form arches and semi-arches, and the comparatively few vertical sticks with the two cross-bars are tied up into parcels which are fastened over the mats at the animal's sides. I have frequently seen a tent, together with the very heavy wooden bed (*tédabut*) and various domestic utensils, being transported by two donkeys, and a normal tent can be transported by a single donkey without much difficulty. As a further indication of this I produce a photograph showing the move- [414] ment of a camp comprising three ordinary tents, three wooden beds, and the necessary household implements and provisions, and it will be seen that all this is transported by six donkeys (cf. Fig. 266). On the whole, an ordinary mat tent is neither very difficult to erect, nor difficult to transport. It is 182 more difficult to erect the mat tent than the skin tent, but skin tents very often constitute a heavier 342* burden. The sheet of skin, or more correctly leather, is heavier than the covering of mats, and though it is true of many skin tents that they have a less elaborate structure than the mat tents, the former need a system of pegs and poles to fasten the sheet, and these have to be transported except where

In literature there are tent descriptions which I have omitted in my survey of Tuareg tent structures, 342*
partly because the descriptions are unclear, and partly because they clearly indicate tents which are
not erected according to any definite method (cf. Demoulin 1928, p. 159; Campbell 1928, p. 205;
Bernard quoted by Laoust 1930, p. 225).

Finally, I add that the sheet of skin is very commonly used for a kind of wind-screen among the
Tuareg. Such wind-screens are of two types:— (1) The sheet is attached to three or four sticks
buried in the ground. A wind-screen of this kind is depicted in Fig. 284a. It serves as a temporary shelter 574
for visitors in a camp. (2) The sheet is supported by three or four sticks placed in one row with a long
stick resting horizontally in their prongs. Such wind-screens are seen in Figs. 284 b-c. They are used by
the members of a household in ordinary camps, and it is quite common to erect tents in this manner during
seasons when rainfall is not expected. Indeed, many Ahaggar Tuareg use their skin tents only for a part 182
of the year, for skin tents are not too well adapted to the burning hot desert climate. If possible, many
Tuareg prefer to live in the shade of rocks and trees, and if efficient shade of this type is found the
skin tents are generally not erected. But the Tuareg will then erect part of the wooden structure, 352
namely the forked sticks carrying cross-bars, as these elements serve not only as supports of the sheet,
but also for the suspension of skin bags and various domestic implements (cf. Fig. 106).

Capot-Rey writes that the Tuareg skin tents are also less waterproof than mat tents (Capot-Rey 114
1953a, p. 225), but this is not correct. During the rains, as we have seen, skin tents are preferred by 182
many Tuareg who at other seasons live in mat tents, and we have also seen that many Ayr Tuareg
will then cover their mat tents with skin. If skin tents were not well fitted for rain they would indeed
be very badly adapted also to the Sudanese zone where they are widely found among the Tuareg.

There can be little doubt that the use of skin sheets is very old, for all over the world we find 342*
them used for portable dwellings among people at primitive subsistence levels. It is also substan- 171
tiated by Feilberg that we have throughout the Near and Middle Easts isolated occurrences of skin
tents, and that these seem to have been more common in these regions in the past. Feilberg mentions
in particular the use of skin for tents among the Tuareg and among the Sluba of Central Arabia (cf.
Feilberg 1944, p. 144). When Feilberg wrote his book on tent development in the Near and Middle
East, a description of the structure of Sluba tents was not available. But later investigations have
intimated that some skin tents of the Sluba do not seem to be structurally related to ordinary Tuareg
skin tents, but rather constitute a kind of wind-screen (cf. Lundbæk 1962). I have mentioned above
that the Ahaggar Tuareg also use their tent skins as wind-screens, but it is evident that structurally the
normal skin tents in all Tuareg groups have nothing to do with wind-screens.

It is possible that the use of skin for wind-screens is extremely old among the Tuareg, but there 342*
seem to be some evidence that plaited grass mats for covering the true tents are older. We have 174
seen that among Tuareg who use mat tents (the *Kel Ayr* and the *Kel Geres*), the inner layer of mats
covering the dome-shaped top consists of *ẻwerwer* mats made of plant stems tied together, and it has
also been mentioned that certain arched tents among the *Kel Dennek* and the Sudanese *Bẻlla* are
covered exclusively with mats produced on this principle. According to Duveyrier mats of straw were
formerly used for tent covering among the Northern Tuareg, and it is possible that the *afeẓu* mats,
which seem to constitute the walls of all Tuareg skin tents, may be considered a survival from tents

have been for centuries much contact between the Tuareg and the regions dominated by the black 342* tent and Arab pastoralists. 174

Certain Arabs who have immigrated from the north to Tuareg country have adapted their original 177 tent structure of black tents to the Tuareg sheet of skin. This is demonstrated in case of Arab pastoralist known as *Deremchaka* (Dermechaka = Ar. El-Mechâkra) who live in the *Kel Dennek* country. These pastoral Arabs, who have been much influenced by their Tuareg neighbours, use two central oblique posts to support a very short cross-bar (*hómmdr* in Arabic), placed at right angles to the longitudinal direction, and it seems as if they have no other wooden elements to support the sheet and no cord attachment to secure the posts in contrast to the *Kel Dennek*. The *Deremchaka* Arabs immigrated to *Kel Dennek* country from Southern Algeria at a date later than the 17th century (cf. Nicolas 1950a, p. 153 f., pl. VIIIc; p. 67 f.). They have probably taken this tent structure with them from Algeria, where it is common to use two central posts carrying a short cross-bar at a right angle to the longitudinal direction.

It would seem that we have another example of the introduction of structural elements of black tents into skin tents, namely the above-mentioned skin tent supported by two central oblique posts with a short cross-bar which is used among certain *Kel Inteser*. This structure resembles that of certain double-posted black tents used among Arab pastoralists in many parts of North Africa, and the *Kel Inteser* Tuareg seem to be Arabs by origin. This is stated by several authors (Delafosse 1912 I, p. 195; Mohammed Saïd 1903, p. 210 ff.; Richer 1924, p. 14; Marty 1920–21, I, p. 254 ff.), and a Tuareg of the *Kel Inteser* group whom I met in Ayr held the same view. There seem to be little doubt that the structure of *Kel Inteser* skin tents derives from black tents and from the Arabs who most probably were responsible for the introduction of black tents to Mauretania and the whole Western Sahara.

The use of black tents among the Western Moors seems to throw important light upon tent devel- 342* opment in North Africa. These tents are mentioned in early literature. Labat says that the Moors of 171 Arguin and the Niger have round and conical tents, and that the former are covered with material 175 of goats and camels (Labat 1728, I, p. 262), while Saugnier and Park mention the occurrence of two central posts in Moorish tents (Saugnier 1799, p. 33; Park ed. 1923, p. 109). A more comprehensive description of such tents is given by Caillié who says that the *Brakna* use two central posts carrying a short cross-bar to support their black tents, which in winter has an interior tent consisting of a sheet of skin supported by poles (Caillié 1830, I, p. 130), and the use of two central posts crossing each other and carrying a short cross-bar on their tops is also mentioned recently from Mauretania (cf. Delpy 1955, p. 18, Fig. 7 no. 25). Douls depicts a black tent of pyramidal form from Rio del Oro (Douls 1888, p. 22 f.) and it would seem that this tent corresponds structurally to the type now in general use among the Moors of Mauretania and described or depicted by several authors (cf. Ould Hamidon 1952, ill. p. 41; Dubié 1953, p. 134, 162; Gabus 1955, ill. p. 72; Meniaud 1912, II, pl. X, p. 48). The particular structure of black tents among the Western Moors is due to the fact that it contains a barrel-vaulted dwelling covered with canvas. This barrel-vaulted dwelling constitutes the only type of dwelling of the Moors in the dry season, but during the rains and when it is extremely hot it is covered by the black tent (cf. Urvoy 1942, p. 33 f., Fig. 2, pl. I, Figs. 3,4). Thus the partic-

*342 171 174 Thus the particular structure of black tents among certain Moors is due to a combination of two dwelling types: the black tent which has apparently been introduced by the Arabs coming down along the Western Sahara from the north, and a barrel-vaulted portable dwelling which we may perhaps conceive as the type of dwelling used in ancient times by the Tuareg of these regions who were conquered by the Arabs.

*342 171 177 If we turn to Tuareg skin tents supported by one central post with a short cross-bar, we may well assume that this particular structure, the so-called T-shaped post, has not only been introduced owing to influence from the black tent, but that it is also largely the result of contact with the Arabs. We know from Duveyrier that the Tuareg of the *Kel Ajjer* have skin tents and in some cases black tents also, and that these dwellings are identical in structure (Duveyrier 1864, p. 403 ff.). It is also certain that the Arabs who live in the region of Tidikelt use T-shaped posts both for black tents and for skin tents. This is recorded (cf. Laoust 1930, p. 224). I have myself gathered the same information from the *Ulad Ba Ḥammu* Arabs among whom I saw a black tent supported by a T-shaped post. Again, if we turn to the *Kunta* Arabs who live north of the Niger Bend, we find that they use for their tents skin sheets which they obtain from the Tuareg (cf. Genevière 1950, p. 1125), and from one of my friends, a *Kunta* Arab living at Agadez, I obtained the information that the *Kunta* use a T-shaped post for their tents which are made of skin or canvas, though in very large tents they use two T-shaped posts.

*342 171 It is very interesting that an investigation of the distribution of T-shaped posts further north in Africa seems to indicate that this particular structure in black tents is found among the Arabs, but not among the Berbers. I have been told by the *Chamba* Arabs of Metlili that they use T-shaped posts in their black tents. Further north I have seen tents with a T-shaped post among Arabs who live in the central part of the Sahara Atlas. I may say that Lieutenant Millot, who has an intimate knowledge of the large pastoral Arab tribes *Rebaya* and *Ferjân* living around El Oued and the great sandy desert of Erg Oriental, told me personally that these Arabs use single T-shaped posts in their tents. We can add to this Feilberg's detailed investigation of black tent structures with a T-shaped post from Eastern Algeria, Tunisia, and from the *Ulad Ali* nomads (cf. Feilberg 1944, p. 146). It is interesting to note that Feilberg has also found T-shaped posts in black tents among Arab pastoralists of Syria and Central Arabia (Feilberg 1944, p. 146).

*342 171 174 I am not going as far as to claim that the black tent was introduced to North Africa by the Arabs, though this may well be so (cf. Nicolaisen 1959, p. 119 ff.), but I think that the present extensive distribution of black tents in the Sahara must be due to them. This seems quite evident when we consider Feilberg's map of the distribution of black tents in Northern Africa, which also shows that the distribution of black tents is not limited to environment of a definite type (cf. Feilberg 1944, map II). Laoust long ago pointed out that black tent vocabulary in Morocco is derived largely from Arabic (Laoust 1930, p. 168 f.). This has later been emphasized even more by Delpy who thinks that all the present black tents of North Africa, including Mauretania, ~~have been~~ introduced by the Arabs. However that may be there is no doubt that Leo Africanus does not refer much to the use of black tents which have acquired their present wide distribution in Northern Africa later than the 16th century A.D. (cf. Delpy 1955, p. 15 f.).

*342 174 177 I conclude my analysis of Tuareg T-shaped structures by saying that this structure is foreign to

634 judicial or military authority, and the vassals could complain over their noble lords to the drum-chief,
565 whom they could even dismiss if dissatisfied with him.

[422] In some Tuareg groups the vassals were not allowed to possess camels, and it is interesting here to
mention that among certain East African peoples cattle or productive cows are owned only by people
[171] of a noble or aristocratic class (cf. Roscoe 1923a, p. 51; 1923b, p. 2, 15; Oberg 1940, p. 130; Maquet
1954, p. 29, 171). Where Tuareg vassals owned camels the noble Tuareg had the right to make use
of these animals, and even to-day there are vassal Tuareg of Ahaggar who give their milk-yielding
she-camels to the nobility.

642 In some Tuareg groups there seem to be traditions in favour of the theory that the class-division,
565 which forms the basis of most Tuareg political systems, arose as the result of the conquest by pastoral
[173] camel-breeders of nomads or semi-nomads subsisting mainly on goat-breeding. We have mentioned
that the word *Kel Ulli*, which means literally "the goat people", are used as a generic term for vassals among the Northern Tuareg and also among the *Kel Dennek* of the *Iwllemmeden* Tuareg. We have also seen that the word *Imŗad* is used for "vassals" in all groups, and it perhaps also refers to goat-breeding with the meaning of "a kid" (cf. p. 408). If this latter explanation be correct it might seem that the word "*Imŗad*" was originally a contemptuous term, and this is in accordance with the fact that vassals among the *Kel Ahaggar* do not use this term, and do not like to be known by it, though they have nothing against the term "*Kel Ulli*".

565 Even to-day there is a certain cultural distinction between noble Tuareg and vassals of Ahaggar.
[262] Rich noble Tuareg will whenever possible subsist on camel's milk, while vassals, although they may
be rich in camels, attach much importance to the breeding of goats and the manufacture of butter
[492] and cheese. The noble Tuareg use camels for the transportation of tents during nomadic migrations,
while even rich vassals will generally use donkeys. Noble women possess special riding saddles for
camels, but they are unknown in the class of true vassals. Vassal women do not generally ride camels,
but donkeys, which are never ridden by noble women. Noble Tuareg and vassals of Ahaggar are
culturally different in other respects, and I attach a particular importance to the following distinc-
[583] tions:— (1) In noble tribes bride-wealth is seven camels, in vassal tribes it is one to three camels,
alternatively perhaps goats. Among vassals of Tasilé-n-Ajjer bride-wealth is 25–30 goats. (2) The
[233] noble Tuareg brand camels and donkeys with a red-hot iron, whereas true vassals use earmarks for
donkeys, as they do for goats. However, in one vassal tribe, the *Dag Ŗali*, donkeys are marked in
[422] both ways. (3) Among noble Tuareg the tent belongs to the husband, among vassals it is owned by
the wife. (4) The noble Tuareg frequently use a tent with a central T-shaped post which is said to be
[342] peculiar to the tents used by noble Tuareg. (5) The bandoleer known as *tirẓemin*, or *ibeyderen*, perhaps
[293] connected with camel-riding, is said to have been used originally among noble Tuareg and not among
[262] vassals. (6) The noble Tuareg do not eat birds, eggs, fish, and reptiles, while vassal Tuareg will not
refuse food of this kind. It can be added that elements of an ancient hunting culture are found partic-
[224] ularly among vassals, who use the hunting spear with a wooden shaft, the spiked wheel-trap, and
[174] other ancient hunting methods. There are other distinctions between noble Tuareg and vassals, but
[233] the two originally distinct cultures have largely merged. Certain noble Tuareg to-day have large flocks
[462] of goats which, however, are tended exclusively by slave women. Apart from sewing, embroidering,

and the manufacture of decorated leather-bags, camel-reins, etc., and decorated wooden milk-bowls, 565
the noble women do extremely little work. 462

Among the *Kel Ajjer* we find some of the above-mentioned distinctions between noble Tuareg and 565
vassals. The traditional dwelling of many vassal Tuareg of Tasilé-n-Ajjer is the cylindrical hut (house) 342
with a conical roof, though vassals in winter use skin-tents during nomadic migrations. Nowadays
noble and vassal Tuareg alike live in straw-huts throughout the hot season. Barth, in his description 565
of the *Kel Ajjer*, mentions that the vassals have no right to possess iron spears and swords (Barth 411
1857–58, I, p. 257), but it is stated explicitly by Duveyrier that noble Tuareg and vassals have the
same weapons – the shield included (Duveyrier 1864, p. 334 ff.). There can be little doubt that Duveyrier's statement is true, and I have been told among all Tuareg that in the past noble and vassal Tuareg
did not differ in regard to weapons. A distinction would also seem rather strange in view of the fact
that Tuareg of both classes fought together. Barth says that noble Tuareg and vassals differ in dress,
but he does not give details (Barth 1857–58, I, p. 257).

As to the Ayr Tuareg of the *Kel Ferwan* group, both noble and vassal Tuareg say that in the past 565
there were hardly any cultural distinctions between them. Bride-wealth in both classes was paid in
camels. We know that the Ayr vassals in the past were predominantly goat-breeders, like many Ayr
vassals to-day, and it seems as if camel-breeding was once a privilege of the nobility in the *Kel Ferwan*
group (cf. p. 431; cf. tradition on the origin of the noble *Kel Ferwan*, p. 421). I have not been
able to find differences between the two classes in regard to material culture and social organization.
The noble Tuareg of the *Kel Ferwan* group say that they never have had types of portable dwellings
other than the barrel-vaulted mat tent, which traditionally belongs to the woman.

There is very little information about cultural distinctions between noble and vassal Tuareg in other
groups. Among the *Iwllemmeden Kel Ataram* the vassals apparently use the arched mat tent more
frequently than do noble Tuareg, but this and the skin tent supported by vertical sticks carrying crossbars are found in both classes (cf. Barth 1857–58, I, p. 372 f.; Gabus 1945, p. 361 & 1948a, p. 15 &
1948b, p. 16). Among the *Iwllemmeden Kel Dennek* the mat tent is used by certain noble Tuareg
(Nicolas 1950a, p. 156 f.). According to the chief *Amdeṛ* women's riding saddles for camels (*akhawi*)
among the *Kel Ataram* are found only in noble tribes. Vassal tribes of the *Kel Ataram* living close to 428
the Niger even to-day practise matrilineal rules of inheritance and succession in contrast to noble
tribes with rules of patrilineal succession and Ḳoranic inheritance (cf. p. 457).

Cultural distinctions between noble Tuareg and vassals are particularly prevalent in the two groups
of Northern Tuareg, and it is significant that the traits characteristic of the noble class are also common
among the *Ireġenaten* who live in Tamesna. This tribe is said to descend from mixed marriages between Tuareg women of the *Ibettenaten* tribe, which claims noble descent, and Arab men. This explanation is found in literature (cf. Lhote 1955, p. 238 f.; Briggs 1958, p. 100) and has been confirmed
to me by Tuareg of this tribe. It is interesting that some traits characteristic of the noble tribes among
the Northern Tuareg are also found in tribes of the *Iseḳḳemaren* class. The tribes of this latter class 171
are said to be related to Arabs among whom we also find some of these traits.

We do not know when the noble Tuareg in the northern groups adopted traits that are also found 177
among Arab bedouins. One might perhaps venture the theory that some of them were introduced

177 with the immigration of the noble *Ti-n-Hinan* tribes which were, perhaps, related to the northern *Hawwara* Berbers. These may have influenced also the *Iwllemmeden* Tuareg who possess some of the traits common to Northern Tuareg and Arabs. The *Hawwara* tribes came under Arab influence at very early stage, and they may have adopted Arab traits before they migrated southwards to settle close to the veiled *Lemta* (cf. p. 409 f.).

64 It is evident that the origin of pastoral political systems dates back to pre-Islamic times, but it is
177 also very clear that political organization has been much influenced by Islam and the Arabs. With
Islam and the Arabs came into political life such important classes as the *Ineslemen*, the *Echchikhen*,
and the *Ichcherifen*, which has made the political organization more complex. Also introduced with
Islam was the *sadakat* fee, which in its origin was a purely religious payment. It is also clear that the
182 rules of blood-wealth payment among the Northern Tuareg (cf. p. 102) were introduced with Islam,
for the Arabs of Northern Sahara, like the Northern Tuareg, give one hundred she-camels for a slain
man, and the same payment is fixed by learned Islamic jurists (cf. Schram-Nielsen 1945, p. 58 f.).
These rules of blood-wealth payment do not seem to have been accepted among the Ayr Tuareg where
there was no fixed amount of camels to be paid for a homicide. Finally the title *Khalifa* given to tribal
deputies was doubtless introduced with Islam and the Arabs. This title is used among the Northern
Tuareg and also among the *Iwllemmeden Kel Dennek*.

634 The problems connected with the origin of the drum-group, the most important political group,
534 are very complicated. It is well known that the drum plays an important part as an insignia of kings
171 and other supreme chiefs over large parts of Africa. The distribution of the drum as an insignia of kings
and chiefs has been studied in some detail by Schilde and Wieschhoff, and later by Irstam (cf. Schilde
1930, p. 117 ff.; Wieschhoff 1933, p. 119 ff., map 34; Irstam 1944; p. 28, 101 ff.). Wieschhoff points
out that the drum as a royal insignia is pre-Islamic in Africa, and that it mainly has this particular
function in state organizations of the so-called Erytrean Cultures.

634 The drum which constitutes the insignia of a Tuareg drum-chief is known as *ettebel* or *eṭṭebel*. In
534 all Tuareg groups this word is also used for "drum-group", and among the *Kel Ayr* and the *Kel Geres*
it is also a title of drum-chiefs. The word *ettebel* is undoubtedly derived from the Arabic word *tobol*
(cf. Foucauld 1951-52, IV, p. 1922), which is also sometimes used for Tuareg drums as it is for drums
of chiefs among the Western Moors (Dubié 1947, p. 173). Formerly, the Sultan of the Fezzan also
had a drum which according to Lyon was known as *tubbel*. Lyon never saw a drum of this kind but
he says that they are found in all towns south of Murzuk (Lyon 1821, p. 248 f.). The drums used by
Tuareg chiefs are always of a very particular form, generally known to anthropologists as "the kettle-drum", and this particular drum among the Tuareg is never used by persons other than the chiefs.
For ordinary music the Tuareg have other drum types or use a wooden mortar suspended by a piece
of skin. It is most interesting that the so-called kettle-drum is a very late type among the many kinds
of drums found in Africa.

534 In regard to the distribution of kettle-drums in Africa, Sachs says that they are found in Islamic
171 North Africa, in the Sudan, and in North-East Africa (Sachs 1929, p. 247). According to Wieschhoff
kettle-drums have a more limited distribution being found only in the Sudan and in North-East Africa
including Ethiopia (Wieschhoff 1933, p. 40, map 29e). As to the distribution of kettle-drums outside

of Africa, Sachs says that they occur mainly in Islamic West Asia from where they were recently in- 534
troduced to Europe and to India where terms for kettle-drums are derived from Arabic (Sachs 1923, 171
p. 58 ff.; 1929, p. 247). Wieschhoff admits that the kettle-drums seem to have been introduced into
India with Islam, but he concludes that the distribution of them in the Sudan and in North-east
Africa indicates that this element belongs to the so-called North Erytrean Culture (cf. Wieschhoff
1933, p. 40 ff., map 29e).

I do not want to advance any theory about the introduction of kettle-drums into Africa, but it 534
seems natural to consider the Tuareg drums known as *ettebel* as an Islamic trait. However we cannot 174
be sure that the use of drums as insignia of chiefs is post-Islamic, for, as we have seen, the drum as
a royal insignia is pre-Islamic in many parts of Africa.

The theory that the drums used by Tuareg chiefs are Islamic seems to agree with the fact that the 643
custom of crowning chiefs among the Tuareg by means of a large turban or headcloth is no doubt 177
also an Arab practice. The use of a turban to crown or install kings and supreme chiefs is rare in Africa 171
south of the Sahara. The use of the turban for the kings of Dar Fur, Wadai, and Bornu is no doubt
to be considered Islamic (cf. Schilde 1930, p. 68; Irstam 1944, p. 118), and there can also be little
doubt that the use of a large turban at the installation of chiefs in Tibesti and Ennedi was originally
introduced as a result of contact with the Arabs – particularly as this turban is known by the Arabic
term *ḳadmul* (cf. Kronenberg 1958, p. 74 f.; Fuchs 1961, p. 52).

It is clear that Islam has greatly influenced Tuareg political organization. But we should also bear 174
in mind that North Africa in pre-Islamic times was influenced by various high cultures which are generally known as *Old Mediterranean* (*Syrtic*) and *Young Sudanese* (*North Erytrean*). It is very possible that the first noble Tuareg who penetrated into the Sahara with their camels came from a country situated towards the East or the North-east, and we have seen that the Ayr Tuareg have traditions about their origin in these quarters (cf. p. 412 ff.). It might therefore seem natural to assume that certain traits which are grouped under the vaguely-defined *Young Sudanese Culture* have been introduced into the Sahara with the immigration of the first noble Tuareg. Lhote thinks that the sandal type known as *takalmi* was perhaps introduced from Egypt with Tuareg immigrations from that country (Lhote 1950d, p. 531). We cannot know this, but it is possible that the oldest camel-breeding nomads introduced into the Sahara certain elements of the so-called *Young Sudanese Culture*.

TUAREG SLAVERY

It is very possible that the political system of the pastoral Tuareg has been greatly influenced by slavery 567
in the sense that slavery made the noble Tuareg less dependent on their vassals. Throughout the 19th 565
century slavery was important to fair-skinned pastoralists of all classes. In other respects it has had
little effect on the changing political relations, for slaves do not constitute a class or a true caste; they
are incorporated into Tuareg society on a kinship pattern.

Slavery is still extremely important in Ahaggar and in Tasilé-n-Ajjer where the French military 567
administration has done very little to abolish it. It is true that the slave-trade no longer exists, but 648

601 brothers, but also all children of father's female cousins and all children of mother's male counsins.

For descending generations kinship terms are different for Ego male and Ego female. Ego male will call all children of his sisters and all children of his female cousins *agg elet ma* ("sister's son") or *welt elet ma* ("sister's daughter"), while all children of his brothers and all children of his male cousins will be called *rur* ("son") or *yell* ("daughter"). Descendants of persons known as *rur* (*yell*) are known as *rur* (*yell*), descendants of persons known as *agg elet ma* (*welt elet ma*) as *agg elet ma* (*welt elet ma*). Ego female has no "sister's children" but will call all relatives of descending generations *rur* ("son") or *yell* ("daughter"). – Collectively all relatives of the second descending generation are known as *iheyawen* (sing. *ahaya*) or *tiheyawin* (sing. *tahayawt*). This term can be used for descendants of more distant generations as indicated by the tribal name *Iheyawen Hada*, that is "descendants of *Hada*".

AYR

[184] There are at least two distinct kinship systems in Ayr, both of which differ from that described above in the case of Ahaggar.

[171] The *Kel Ewey* Tuareg have a system related to that of the Hausa-speaking population of Agadez and further south. In *Kel Ewey* the terms for "brothers" and "sisters" are never used classificatorily. All parallel cousins and cross-cousins are known as *ibubazen* (sing. *abubaz*; fem. *tabubazt*), and children of all cousins are known as *tégazé*, which is used both for males and females. The *Kel Ewey*, in contrast to other Tuareg, do not make any distinction between parallel cousins and cross-cousins. As far as my knowledge goes all this applies only to the true *Kel Ewey* and not for such Tuareg groups as the *Kel Tamat* and the *Ikezkezen* who are politically attached to the *Kel Ewey*.

The kinship system of the *Kel Ferwan* Tuareg comes close to the system of the Ahaggar Tuareg, but the two systems are not identical. The word *anna* ("mother") is used for all female relatives of ascending generations and also for spouses of such relatives, who are called *adda* ("father"). The term for "father" (*adda*) is applied to all grandfathers whether they are patrilineally or matrilineally related to Ego, to father's brothers, and to the husbands of father's sisters and mother's sisters. It is also applied to father's father's sons but not to other male cousins of Ego's father and mother, for all other male cousins of father and mother are termed *awet ma*, the word employed for "mother's brother". Thus ~~the term~~ *awet ma* is used for true mother's brothers and for most male relatives of the parents' generation, while it is never used for matrilineal kinsmen of the second ascending generation. The wives of all males termed *awet ma* are known as *tamtet n awet ma* ("mother's brother's wife") and not as *anna* ("mother").

The Kel Ferwan Tuareg do not use the term *aña* (pl. *añaten*) and welet ma (pl. *tañatin*) for brothers and sisters. When they talk about brothers and sisters without reference to age they use the terms for younger brother (*amedray*, pl. *imedrayen*) and younger sister (*tamedrayt*, pl. *timedrayin*). The term for "elder brother" and "elder sister" are identical with those used in Ahaggar, namely *ameḳḳar* and *tameḳḳart*. Parallel cousins are called "elder brother" ("younger brother") and "elder sister" ("younger sister") according to the same rule as in Ahaggar. Should their father or mother be older

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583 It would seem from all this that the main function of bride-wealth is to create a social bond between
586 two families that intermarry, and is a sort of confirmation of the social rights of the children. When
848 bride-wealth is not taken back at the dissolution of a marriage the marriage is not socially dissolved. When two people divorce they continue to have each other's relations as in-laws with whom they have joking and avoidance exactly as if they were still married, and the children continue to have their full rights within both families.

The fact that bride-wealth is the outward symbol of the persistence of in-law relations when a marriage is dissolved, discloses the true meaning of bride-wealth, which is more clearly understood when we consider that children of a dissolved marriage, provided the bride-wealth is not claimed back, will belong to the father as long as he is alive, and not to the mother. The mother and her family obtain no right to the children until their father has died. It is further stated by some Tuareg that a child of a dissolved marriage from which bride-wealth is taken back will have no right to inherit its father. Bride-wealth is a symbolic expression of the new bonds established between two families at a marriage, and it places children of this marriage in the father's family until his death, and secures their inheritance rights in respect of the father and his paternal kin. All this seems to agree with the fact that the Northern Tuareg vassals, who give bride-wealth in goats, do not always hand over all animals at a marriage. The full payment may be postponed for some years, but should be accomplished before the birth of a child.

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[171] The explanation I have given of the functional position of Tuareg bride-wealth would seem to be in agreement with Radcliffe-Brown's account of the functional position of the *lobola* payments of South Africa. Radcliffe-Brown says that one of the chief functions of *lobola* is to fix the social position of the children of a marriage. If the proper payment is made by a family, then the children of the woman who comes to them in exchange for the cattle belong to that family (Radcliffe-Brown 1952, p. 30). This is also stated by Krige (cf. Krige 1937, p. 113).

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582 The functional position of Tuareg bride-wealth should perhaps also be viewed in the light of recent investigations on the function of bride-wealth in Middle Eastern societies, where preferential marriage is that to a father's brother's daughter. This preferential marriage type has been explained in different ways by different authors: Westermarck says that marriages with a father's brother's daughter are popular because they keep the property in the family, and especially popular in shereefian families, because they preserve the blood pure (Westermarck 1914, p. 53). The argument that marriage with a father's brother's daughter keeps property within the family has been recognized also by Granquist (cf. Granquist 1931, p. 78), and by many other anthropologists. But this argument is valid only when Ḳoranic law is observed, which is not always the case (F. Barth 1954, p. 170; cf. Murphy & Kasdan 1959, p. 17).

Wellhausen observed that marriage with a paternal cousin served the purpose of strengthening the kinship tie within the family, and he believed that marriages contracted within a village had the function of solidifying relationships between its inmates (cf. Westermarck 1914, p. 56). Quite recently this viewpoint has been taken up and reformulated by F. Barth who states that marriage with a father's brother's daughter plays a prominent rôle in solidifying the minimal lineage as a corporate group in factional struggle (F. Barth 1954, p. 171), while Murphy and Kasdan, who refer to Barth's study

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582 p. 168 ff.). I do not want to judge this theory as I have little personal knowledge of the North African
583 Arabs who practise marriage with a paternal cousin. However, the argument that one of the chief
[114] functions of the bride-wealth is the confirmation of the social position of the children of a marriage, seems also valid for bride-wealth customs among people who practise preferential paternal cousin marriage, for it is clear that should a man marry a father's brother's daughter she will not have to change her social group after marriage. Furthermore, the fathers of the groom and the bride are brothers who among North African Arabs may own livestock and other types of property in
T common.

582 Tuareg cross-cousin marriage is symetrical, but the very best cross-cousin to marry is the true
604 mother's brother's daughter. This would seem to agree with the very close relationship between a
613 man and his mother's brother of the same matrilineage. A man has succession rights after his mother's brother, and many Tuareg say that the relationship between sister's son and mother's brother is as close as that between father and son. A man should do his outmost to defend his mother's brother, and it is very likely that marriage with a mother's brother's daughter has as its chief function the reinforcement of the matrilineage. It can here be added that marriage with a mother's brother's daughter will not easily lead to quarrels between the families of the married couple, because the fathers of the groom and the bride are cross-cousins and/or brothers-in-law, and consequently there is an institutional joking relationship between them.

We should perhaps explain Tuareg marriage with a mother's brother's daughter in the light of its importance for the reinforcement and maintenance of the matrilineage which has important social functions in Tuareg society. However, this marriage type does not exempt the groom or his family
T from paying bride-wealth.

● [170] It is interesting to note that among the South African Bantu, who give bride-wealth (*lobola*) at a
T marriage, the groom is expected to assist his parents-in-law whenever they need his help (Krige 1937,
606 p. 113). This is also so among the Tuareg who claim that parents-in-law and sons-in-law should always support each other even if they be in-laws of dissolved marriages from which bride-wealth has not been claimed back. Indeed, some Tuareg consider it a very good thing to have contracted several marriages and thus to have obtained many in-laws who are expected to assist their son-in-law when
T he needs their help.

582 Finally, I add the statement of some Ahaggar Tuareg that bride-wealth payment is often considered
583 less essential where a man has married a maternal cousin or her daughter because in that event husband and wife are maternal relatives who, in case maternal cousin marriage is practised within their
T families, may be closely related also in the paternal line.

585 Both in Ahaggar and in Ayr the marriage is ratified by representatives of the groom and the bride
[793] before an *Aneslem*, that is to say a marabut. This may take place on the first day of the wedding ceremony, but it may as well be done days, weeks, or even months before the wedding takes place. The parents of the groom and the bride may have the marriage ratified even though their children do not want to be married. The wedding ceremonies in Ahaggar and Ayr differ slightly, but they are no doubt functionally identical.

In Ahaggar the marriage ceremony is briefly as follows:—

Hahn, who was the first to write in detail on the historical origin of subsistence activities, stated 121
as his view that cultures based exclusively on stock-breeding were recent and were preceded by mixed farming cultures (Hahn 1896, p. 31 f.; 1905, p. 131; 1908, p. 19). Though some of Hahn's arguments in favour of this theoretical conception are difficult to accept, his general view that pure stock-breeding did not form a general stage in the evolution of culture is recognized by many scholars who hold that cultivation is everywhere older than stock-breeding. Forde long ago pointed out the great instability of pastoralism and its dependence upon grown cereals (Forde 1950 (1. ed. 1934), p. 403 f.), and in a very recent study, published in collaboration with Mary Douglas, it is stated that "Pastoral nomadism which is popularly believed to have preceded the development of agriculture actually appeared at a later stage in the Old World on the fringes of settled populations used to cultivation with the rearing of livestock" (Forde 1960, p. 330). Important contributions to the solution of the problem of the origin of stock-breeding have also been made by Childe, who says that in practically all the oldest food-producing settlements examined by archaeologists in Europe, Hither Asia, and North Africa, the basic industry is mixed farming (Childe 1936, p. 85). Childe does not explicitly claim that pastoral stock-breeding derived from a mixed farming culture, because pastoralists are not likely to leave many vestiges by which the archaeologists can recognize their presence (Childe 1936, p. 91). But Childe's general view seems to be in favour of origin of pastoral stock-breeding from a culture which knew farming, and he points out "that ancestors of our farmyard animals lived wild in most of the regions that seem likely to have comprised the cradle of grain-growing" (Childe 1936, p. 86).

In my description of Tuareg ecology I have indicated the great importance of agricultural products 433
for food among true pastoralists, both in Ahaggar and in Ayr. I believe that the latter Tuareg and the 262
Tuareg of the Sudanese savannah could perhaps subsists without cereals grown by agriculturists, 171
though it would not be so easy for them. The Ayr Tuareg around Agadez admit this and refer to their great difficulties in subsisting during one year of the second world war when millet was scarce. Most African pastoralists acquire provisions of cultivated grain for their food during periods when milk is scarce, and the general conception that African nomads live mainly on milk and meat is not valid. However, we cannot state that all pastoralists are dependent on agriculture for food, for a few people seem to subsist on stock-breeding products and on wild seeds. Thus Seligman describes from the Beja a tribe named Bedawib which differs from other Beja groups in that its members have no camels and do not eat agricultural food:— "The Bedawib do not cultivate at all and it is said that they would not touch grain even if it were given to them so that they live almost entirely on milk and meat". (Seligman 1913, p. 599 f.). Other pastoralists of the so-called East African Cattle Complex eat cereals grown by themselves or by neighbouring agriculturists, but agricultural food-products play a very little part to some of these people (cf. Lowie 1938, p. 314), and the Hottentots live by cattle-breeding supplemented by hunting and collecting (cf. Schapera 1930, p. 235). The argument that stock-breeding cultures cannot exists except in a kind of symbiosis with agriculture is not valid, but agricultural food-products make life easier for pastoralists who cannot subsist on milk all the year round. For we must bear in mind that in an arid or semi-arid country conditions of collecting are changeable, and it is also important to note that wild seeds are generally far less nourishing than are grown cereals. Even in the savannah country it is a great advantage for pastoralists to have access to grown cereals, and

433 pastoralists who live in the true desert country could hardly live without agricultural food-products.
262 In dry years the Ahaggar Tuareg subsist almost exclusively on wheat, millet, and dates. They cannot
171 in such years live on milk and meat, and collecting is of no importance, as the plants suitable for collecting do not germinate with the exception of a few species which are of very little value. In very arid countries agriculture seems to be necessary for the subsistence of pastoralists, and it is of great value also to pastoralists who live under more favourable conditions.

433 Partly owing to the decline of caravan trading, there are pastoralists who have recently taken up
178 agriculture in connection with irrigation. We have also mentioned that the Tuareg of Tasilé-n-Ajjer
171 engage in a kind of primitive agriculture in the river valleys after heavy rain, and we know from literature that this method was also practised in Ahaggar before the introduction of developed irrigation systems. We have seen that throughout the northern parts of the Sahara a connection between shifting cultivation and pastoralism is the rule rather than the exception. Primitive corn growing is, in fact, practised among many other pastoralists besides the Northern Tuareg, and the bedouins who sow wheat and barley by means of the plough or the hoe further north on the outskirts of the desert. In Southern Mauretania certain nomads grow millet and water melons in the river valleys which are annually flooded. Sowing is done mainly where the valleys broaden, small dams being constructed to detain water. This cultivation method is also applied by certain pastoral *Zenaga* (cf. Capot-Rey 1953a, p. 277), who are, perhaps, descendants of the ancient *Sanhaja* Tuareg who lived in this country before the Arab conquest. There are also pastoralists of the Beja people who engage in agriculture when living close to rivers. The Bisharin who camp around the Atbara River grow melons in the wet sand (Baker 1867, p. 38), the Hadendoa pastoralists, when camping close to the Gash River in the dry season, grow millet and other cereals (Seligman 1913, p. 599), and agriculture is also practised in the same region by pastoral Beni Amer (Munzinger 1864, p. 332).

A journey from the Mediterranean coast takes us from people who live mainly by agriculture (e.g., the Kabyle) to people who live by mixed farming as semi-nomads (e.g., the Chawiya), to people who are roaming pastoralists but practise shifting cultivation when possible and fairly regularly (e.g., the Ulad Nail, the Larba, and other Arab pastoralists on the outskirts of the desert), and, finally to the true desert nomads where agriculture is practised on a very small scale (e.g., the *Kel Ajjer*) or not at all (e.g., the *Kel Ahaggar* and the Chamba). It would thus be natural to explain the development of true pastoralism in Northern Africa as an adaption of a mixed farming culture to environment, and this view seems to have been adopted by several authors (Frobenius 1904, p. 154 f.; Steensby 1908–09, p. 285; Wölfel 1941, p. 89–40; Herzog 1956, p. 210–223).

174 The question of the origin of North African pastoralism can only be answered by a deeper knowledge of history, and the answer is not easy to find. Historical sources do not reach far back in North Africa. We know that throughout the Middle Ages the people who lived on the borderland of the Northern Sahara south of the Atlas and along the Mediterranean coast possessed an economic system much like that prevailing nowadays. Ibn Khaldun describes the economic life of the *Sanhaja* Berbers, who lived in the country between Tunis and Cairuan, saying that they are cow and sheep breeders who also engage in agriculture (Ibn Khaldun III, p. 225). Of an Arab tribe called Azza of Cyrenaica, he says that though its members are plough cultivators they also lead their domestic animals into the

172 namely the cylindrical house with a conical roof, which seems to have constituted the original type of dwelling of many northern vassals. This dwelling type has a world-wide distribution among primitive agriculturists (cf. Birket-Smith 1948, p. 313), and we know that it was used in North Africa in antiquity. Hut-circles with heavy walls from predynastic cultures near Badari may perhaps be considered remains of such dwellings (cf. Brunton & Caton-Thompson 1928, p. 44 ff., 82 ff., pl. LXVI).

174 We might perhaps assume that culture as it existed among the ancestors of Tuareg vassals before
the introduction of the camel was influenced by agricultural traits, and it would not be unnatural to
advance the theory that it derives from a mixed farming culture. However, there can also be little
doubt that we find in Tuareg culture features that are extremely old and probably date back to a
hunting culture. It is of particular interest that the Tuareg have preserved very primitive methods of
food preparation which are not generally known to true agriculturists (e.g., cooking with hot stones).
I believe that the existence of such simple methods may be an indication that the culture is related
to ancient hunting and collecting cultures. It is also very difficult to reject the possibility of a connection
between hunting and the domestication of animals, for we have seen above that the Tuareg even
to-day catch wild donkeys for domestication, and that, in the Middle Ages, they most possibly hunted
these animals in order to utilize their meat and skin before the introduction of Islam which made
175 donkey's meat unlawful. It seems as if donkeys and asses have been important food animals throughout
171 the Near and Middle East even after the advent of Islam for we not only have Leo Africanus' state-
[261] ment that the nomads of the Sahara consume the meat of donkeys caught in snares (Leo Africanus
II, p. 944), but Duveyrier's statement that the Tuareg of Tasilé-n-Ajjer catch donkeys in traps to
utilize the skin (Duveyrier 1864, p. 231), and the fact that the Tuareg of Ahaggar even very recently
have eaten donkey's meat in case of famine. There is information in literature which indicates that
donkeys and asses have been commonly eaten elsewhere. Ibn Khaldun says that donkeys and horses
were eaten by Algerian town-dwellers in case of need during the Middle Ages (Ibn Khaldun III,
p. 377 f.), and Ibn Batutah states that Arabs of Oman consider donkey's meat lawful (Ibn Batutah II,
p. 229). Ibn Batutah also says that meat of asses was eaten by the people of Suakin (Ibn Batutah II,
p. 162), and we know that even up to modern times the Beja have hunted asses in order to consume
their meat (Baker 1867, p. 55 f.; Murray 1935, p. 125). There is no information about the hunting
of asses or donkeys for domestication among the Beja, but it is reported by several authors that
members of this group leave their domesticated mares where wild asses are common in order that
they shall mate with wild stallions (Heuglin 1869, p. 280; Bland-Sutton 1911, p. 188 f.; Murray 1935,
p. 125).

174 We cannot discard the possibility that the domestication of donkeys originated from hunting, and it seems as though the donkey was first domesticated in Africa, where the wild ass still exists. When the domestication took place we do not know, but we are aware that domestic donkeys have been used in Egypt and in Asia (Ur) as early as 3000 B.C. (cf. Antonius 1922, p. 266; Hilzheimer 1930, p. 477). The donkey played a most important rôle in Ancient Egypt where it even had military importance (cf. Erman 1922, p. 592 f., 636, Figs. 207 & 208, pl. 36).

As to the domestication of other animals, we do not know how they were first tamed, and it has generally been overlooked that though there may perhaps be a connection between certain hunting

methods and domestication, the first domestic animals may of course well have been tamed in a culture 174
which already knew of farming. It seems to me that generally speaking the theory of a development [121]
of stock-breeding within a farming culture is the most plausible one.

At the time when the noble Tuareg introduced the camel the North African pastoralists were
apparently mainly goat-breeders who also had sheep of the *Ovis longipes* type, and donkeys. Tuareg 173
traditions state that the ancestors of the oldest vassal tribes in Ahaggar, the *Isebeten*, were not only
goat-breeders but also hunters, and a tradition collected by Foucauld states that they also knew agri-
culture (cf. p. 408). This may perhaps be so, though most Tuareg seem to deny it. A tradition of hunting
as an important means of subsistence to the ancestors of vassal Tuareg accords well with the fact
that important traits of a hunting culture appear to exist among the Tuareg; how can this be explained
when we also claim that stock-breeding apparently developed from a mixed farming culture? I
believe the most plausible explanation to be that the ancestors of Tuareg vassals first lived in the
northern Sahara as roaming hunters. At a later date they were strongly influenced by a mixed-farming
culture from which they adopted a primitive type of agriculture and stock-breeding. But stock-breeding
came to play the largest rôle for them, partly because it was better fitted to environment, and partly
because it was adapted to the roaming life of hunters.

It is most unfortunate that archaeology is so little advanced in the Central Sahara. Most archaeolo- 172
gists have been occupied with the study of rock-engravings. These are important to our knowledge of
cultural history, but they cannot be precisely dated. Apart from the study of engravings, investigations
have mainly concentrated upon tombs and other stone monuments, and these investigations do not
help us much to understand the development of subsistence activities in the Sahara. However, we
may ascribe some importance to the study of stone tombs of the so-called *chouchet* type. This, it is [173]
claimed by the ancient vassals of Ahaggar, constituted the traditional tomb of pre-Islamic Tuareg,
and the tomb in which their ancestress *Takama* is said to have been buried is of *chouchet* type. Such
tombs in Ahaggar seem to be found mainly close to river valleys that are flooded relatively frequently
and generally are also close to modern cultivation centres (cf. Lhote 1955a, p. 83). These tombs have
been used among the Tuareg even after their Islamization (cf. Monod 1932, p. 34; Reygasse 1950,
p. 39) but it is unknown when they were introduced into the Sahara. However, tombs of *chouchet* type 172
are not only found in large parts of Tuareg country (Ahaggar, Tasilé-n-Ajjer, In Azawa, Northern 171
Ayr, around Zinder, between Zinder and the Niger at Adṛaṛ of Tawa, Adṛaṛ of the Iforas), but also
in the adjacent regions of Mauretania, Tibesti, and Bornu, which is their southern limit of distribution
(cf. Reygasse 1950, p. 40; Lhote 1955a, p. 83; Mauny 1961, p. 76 f.). Types of *chouchet* tombs occur
in Algeria north of Hodna and in Aurès (cf. Reygasse 1950, p. 8) and perhaps also in the Canary
Islands (cf. Wölfel 1950, p. 248). Thus the possibility cannot be excluded that the former existence of
such tombs in Tuareg culture may be due to some connection with mixed farmers of the Mediterranean
at an early, but unfortunately yet unknown, date.

A last problem to be touched upon is the generally accepted view that nomadic stock-breeding is 121
intimately connected with a patrilineal social system. This view has been emphasized in particular
by the so-called Vienna School of ethnology under the leadership of Schmidt and Koppers, who speak
about "Der viehzüchterische Nomadismus als Schöpfer der patriarchalen Systems und des Erst-

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301 the Sudan. The only place in Africa south of the Sudan where
177 any orientation toward a display side is sometimes found is Benin. Figure 4 shows a ring made of bronze (Museum für Völkerkunde, Vienna, Inv. No. 64,768), which is done in a "lost form" and stems from Benin. The display center is clearly indicated by [98] a horizontal double loop and two boat-shaped, very prominent forms set crosswise. Among the Jaunde [Yaunde] in the Cameroons we likewise find rings which have a certain resem-

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301 blance in their construction to the two arm-circlets of the Wolof. Figure 5 (Museum für Völkerkunde, Inv. No. 88,037) is made of brass, twisted, open, the ends terminating in multi-faceted cubes -- incidentally, resembling the clasp-nail of our foot-ring. If we compare this circlet with an arm-ring of the Wolof (Fig. 1), we find the clearly projecting terminal knob (in this case circularly flattened) and the twisted rod, in this case, however,

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[325] merely cut out as it were -- determined by the different technique of construction. Complete twisting is possible only if the square glowing metal rod is twisted, but not if the ring is poured into a clay mold. This is shown especially clearly in Figure 3. We therefore see here how extensively the technique of manufacture may alter stylistic expression, and one must first "translate back," if relationships are to be established.

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171 An earring of the Tuareg from Air (Fig. 13)[1] is almost identical with the Jaunde specimen. The correspondence extends to the details, for example, the terminal knob and its ornamental decoration (central concentric circles flanked by four smaller circles).

The form of the ornamental decoration gives us a few more quite interesting hints. In this connection, it has already been mentioned that an impression made with punches is involved here. If we disregard the difference in technique, however, we find the greatest similarity in the design and composition of the ornaments in the silver work of the Tuareg (2). In a silver

[1] [For Figs. 7-13, See category 116, P.10 -- Analyst]

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2. All of the reproductions of Tuareg ornaments were made from drawings

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[98 cont.]

by L. Zöhrer, D.D., Vienna. Dr. Zöhrer made them on his expeditions into Tuareg territory. I sincerely thank Dr. Zöhrer here for his permission to use the illustrations.

head-ornament of a Tuareg soldier from Atakar (Fig. 7) we find correspondences extending almost to details with the design of our foot-ring (Fig. 2).[2] The arrangement of the design on the center rhomboid (raised in both cases) is almost congruent: two small concentric circles in the center, surrounded by a smaller rhomboid, the latter bordered by small, linked, diagonal crosses; emphasis on the four corners of the background, among the Wolof by means of semicircles, among the Tuareg by means of circles. A chest ornament from Air (Fig. 8) is surprisingly similar to the center section of our foot-ring in the way the entire surface is filled out. Moreover, we again find the entire surface bordered by small diagonally-placed crosses. Figure 9, a Tuareg chest ornament of silver from Seken in Ifoghas, shows a characteristic detail of our Wolof ornament: the semicircle filled in with parallel hatching.

On the reverse side of a door latch from Hoggar (Fig. 10) we find very marked agreement with the design on the center section of the Wolof arm-ring in Figure 3: crescents with the convex sides touching, enclosed by hatched triangles along the edge. [99] [Figs. 1-6 appear here.]

[100] Certain similarities with the Wolof arm-ring (Fig. 1), the design of which deviates somewhat from the scheme and yet is in some respects reminiscent of plant motifs -- although purely geometrical -- are found in a chest ornament from Ifoghas (Fig. 11) and a door latch from Ifoghas (Fig. 12).

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The final offshoots of these decorative motifs (concentric circles, hatching, etc.) seem to reach as far as Benin, as is shown by a bronze bracelet (Inv. No. 64,708) in the Museum für Völkerkunde, Vienna (Fig. 6). Along with certain correspondences in the decorative design, it also has the display

[2] [For Figs. 1-6, see category 116, p. 8--Analyst]

17: Schweeger-Hefel--10 E-4 (no date) 1954 MS30 Wolof MS30

Tuareg MS25 ●

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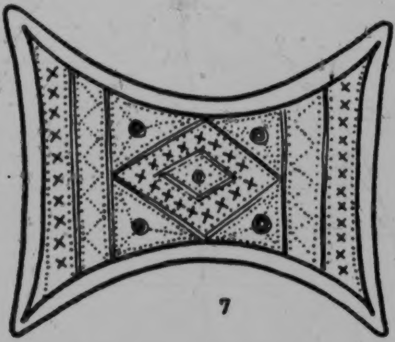

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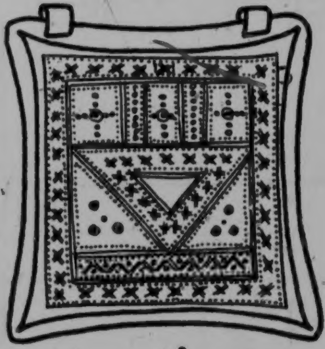

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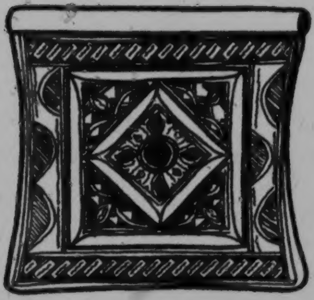

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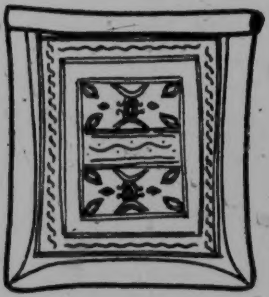

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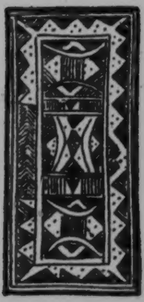

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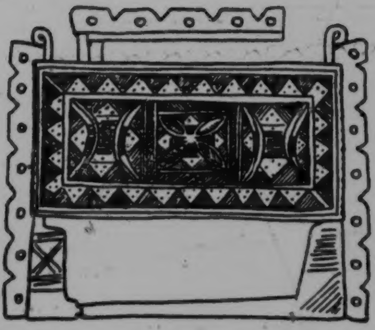

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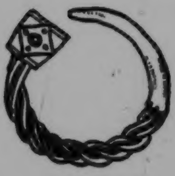

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Fig. 7. Head ornament, silver, Museum für Völkerkunde, Vienna, Inv. No. Post XX/1938, No. 8a, Tuareg.

Fig. 8. Chest ornament, silver, original in the possession of the Tuareg Neni ag Ghali near Agadez; drawing in the possession of the Museum für Völkerkunde, Vienna, Post IX/1950, No. 75.

(captions cont.)

● Tuareg MS25

[Captions cont. for Figs. 7-13 p. 101.]

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Fig. 9. Chest ornament, silver; original in the possession of the Tuareg Baba ag Hamu, Tin-Reiden, Ifoghas; the drawing as for Fig. 8, Post IX/1950, No. 61.

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Fig. 10. Door latch (reverse side); original in the possession of the Museum für Völkerkunde, Munich; drawing, Museum für Völkerkunde, Vienna, Post IX/1950, No. 125.

Fig. 11. Chest ornament. Original in the possession of the Tuareg Akauil, Idnan from Tinesraft. Drawing in the Musée d'Ethnographie, Neuchâtel.

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Fig. 12. Door latch. Original in the possession of the Tuareg Belcho ag Bibi, Abelessa; drawing, Museum für Völkerkunde, Vienna, Post IX/1950, No. 146.

Fig. 13. Earring. Original in the possession of the Tuareg Tauti, Agadez; drawing, Museum für Völkerkunde, Vienna, Post IX/1950, No. 30.

Figs. 7-13 are drawings from the originals by Ludwig Zöhrer, D.D., Vienna.